Everyman's Encyclopædia

IN TWELVE VOLUMES



THE THIRD EDITION

THE THIRD EDITION EVERYMAN'S ENCYCLOPÆDIA IN TWELVE VOLUMES

VOLUME SEVEN
HASE—JEST-BOOKS

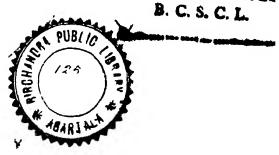
EDITED BY ATHELSTAN RIDGWAY, LL.B.

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EVERYMAN'S ENCYCLOPÆDIA

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ABBREVIATIONS

The titles of subjects, which are printed first in hold type, have been abbreviated within each article to the initial letter or letters.

ac., acre(s). agric., agricultural. ambas., ambassador(h). Amer., American. anct., ancient. ann., annual. A.-S., Anglo-Saxon. A.-V., Authorised Version. b., born.
Biog. Dic., Biographical
Dictionary. bor., borough. bp., birthbolace. Brit., British. C., Centigrade. c., about. cap., capital co., county. com, mmune. cub. it., cubic feet d, died. Dan., Danish. dept., department dist., district. div., division. E., east : eastern ocolos., ecclesiastical. od., edition; edited. e.g., for example. Ency. Brit., Encyclopedia Britannica. Eng., English estab., established : establish ment. F., Fahrenheit. f., flourished. fort. m., fortified town Fr., French. ft., feet. Ger., German. Gk., Greek. gov., government. Heb., Hebrew. hist., history. horticult., horticultural. h.p., horse-power. hr., hour. i.e., that is. in., inch(es). inhab., inhabitant(4).

is., mland(-). It., Italian. Jap., Japanese. jour., journal. Lat., Latin. lat., latitude. lb., pound(s). l. b., left bank. long., longitude. m., mile(s). manuf., manufacture. min., minute(s). mrkt. tn., market town MS., manuscript. mt., mount; mountain.
N., north; northern.
N.T., New Testament.
O.E., Old English.
O.F., Old Trench.
O.T., Old Testament. oz., ounce(s). par., parish. parl., parliamentary. pop., population. prin., principal. prof., professor. prot, province, provincial, pub., published publicatio q.r., which see. R., riv., river. r. b., right bank. Rom., Roman. R.V., Revised Version. publication S., south; southern sec., second(s). sev., several. Sp., Spanish. sp. gr., specific gravity. sq. m., square mile(s). temp., temperature. ter., territory. tn., town. trans. translated ; translation trib., tributary. univ., university. urb., urbaff. vil., village. vol., volume
W., west; western
Wm., William
yd., yard.

The article ABBREVIATIONS contains a list of those in general use. See also ABBREVIATION (music) and ELEMENTS (chemical symbols).

Hase, Karl August von (1800-90), Ger. theologian, b. at Steinbach in Saxony. In theologian, b. at Steinbach in Saxony. In 1829 he was appointed prof. of philosophy at the Univ. of Leipzig, and prof. of theology at Jena in 1830. His best known works are Die Leipziger Disputation (1827) Leben Jesu (1829, Eng. trans. 1881), in which he anticipated the arguments put forward by Strauss; Theologische Streitschriften (1834-37), Die Tubinger Schule (1855), Hutterus Redivirus (1883), Lehrbuch der Kirchengeschichte (1886, Eng. trans. 1895), Die Beiden Erzbischöfe (1839) and an ed. of Libri Symbolici Ecclesiae Evangelive. See life by R. Buerkner 1900. Hassk, Jaroslav (1883-1923). Czech writer, b. at Prague, author of The Adventures of the Excellent Soldier Schweik during the World War (1921). See further under Czechoslovakia—Literature. Haselrig. Sir Arthur (also Haselrige,

Haselrig, Sir Arthur (also Heselrige, Hazelrigg), one of the five members whom Charles I. ordered to be arrested for high treason on Jan. 3, 1642. The others were Pym, Hampden, Hollis, and Strode. The Commons r freed to give them up.

Hashisu, of Hasheesh, Arabic name, meaning literally 'dried herb,' for the various preparations obtained from the thowering tops of the Indian hemp plant (Cunnabis indica). It is used as an intoxicant in sov. E. countries (called 'bhang') cant in sov. E. countries (called 'bhang' in India), and is either smoked, chewed, or drunk. It is valuable as a narcotic, and is sometimes employed in medicine as an anodyne. The Eng. word 'assasin' is probably derived from the Arabic' hashishin,' i.e. hemp-caters, who committed great excesses when under the intinence of hashish. See Haws.

Haskerland, com. in the prov. of Friesland in the Netherlands, Pop. about 8000.

8000.

Haslemere, mrkt. tn. and par. of England in the co. of Surrey in the Guildford div., 10 m. from Farnham, and 8 m. from Godalming. Near by is Aldworth House, Tennyson's last home. The tn. is situated in very picturesque surroundings, and is a favourite residential place. There is a Royal School for Naval and Marine Officers' daughters at H. Hind head Common with its celebrated Devil's Punch Bowl is quite near. Pop. 13.300

Haslingden, mrkt. tn. and municipal bor, of England in the co. of Laucashire It is in the diocese of Manchester, and has two railway stations, Haslingdon and Helmshore. It has a church dating from the thirteenth century. It manufa-cottons, silks, woollens. There are coalcottons, silks, woollens. There are mines in the vicinity. Pop. 15,700.

Hasmoneans. sce ARMONEANS

MACCABRES.

Hasps, in. in Gormany, prov. of Westphalia, hoted as the seat of an important iron and steel industry, and manufactors, etc. Pop. 25,000.

Hassail, Arthur (1853-1931), Eng. historian, b. at Bebington, Cheshire; second son of Henry Burton H. Educated at Uppingham and Oxford. In 1880 he became a lecturer and tutor in hist. at Keblo College, and in 1883 at Christ Church. His works include: Life of Bolingbruke (Statesmen Series, 1889), Lunis XIV. (Heroes of the Nations, 1895), The Making of the British Empire (1896), A Hambook of European History (1897), The Balance of Power (1896, 1898, in the Periods of European History Series, of kindish History (1901), History of France (1901), The French People (1901), Mazarin, (Forgian Statesmen Series 1903), History (1901), The French People (1901), Mazarin, (Foreign Statesmen Series 1903), History of France (Temple Primers, 1903), The Trulor Dynasty (1904), A Brief Survey of European History (1906), The Expansion of Great Britain (1907), Castlereagh (1908), The Great Ribellion (1909), Modern Europe (1910), The Great Napoleon (1911), History of British Foreim Policy (1912) History of British Foreign Policy (1912), France, Medieval and Modern (1918), A British History chronologically arranged

Hassan, dist. of Mysore state, India. The chief tn. is H. in the centre of the dist. H. is bounded on the S. partly by the state of Coorg, and on the S.W. by the Madras dist. of S. Kanara. Its erea is 2547 sq. m. The dist, is divided into two portions, the Mainad, or hill-country, including some of the highest ranges of the W. Ghat, and the Maidan, or plain country, in the direction of Mysore to the S. Staple cultivation, dry and wet crops. Pop. 600,000.

Hassan and Hussein, sons of Ali and Mohammed's daughter Fatima:

Hussin (625-69) succeeded his father as Caliph at Kufa in 660, but in a few months retired in favour of his rival Moaweeyah, and went to live at Medina, where he attained a great reputation for plety. He is said to have been poisoned

by one of his wives.

by one of his wives.

Hussein, or Hosein (629-80), succeeded his brother Hassan as Imam of the Shittes, and claimed the caliphate also. In attempting to depose Moaweeyah, he was killed by the latter's troops at Kerbela. The two brothers are held in the greatest veneration by the Shittes, who hold an ann. festival in their honour, at which their deaths are deaunthally who hold an ann. festival in their honour, at which their deaths are dramatically represented. See G. Weil, Geschichte der Chalifen, 1815; Sir L. Pelly, The Miracle-Play of Hasan and Hosein, 1879; and M. Arnold 'A Persian Passion-Play in Resays in Criticism, 1865.

Hasselt (Hassetholt, hazel grove), chief the prov. of Limbourg in Belgium. It is 16 m. from Maastricht by rail. It has manufs, of linen fabries, tobacco, and

has manufs. of linen fabrics, tobacco, and gin-distilleries. Chicory is largely culti-vated in the surrounding dist. The

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in 1831. Pop. 29,200.

Hassler (or Hasler), Hans Leo (1564–1612), Ger. composer, b. at Nuremberg, the 1612), Ger. composer, b. at Nuremberg, the most famous member of a distinguished musical family. He began his career as an organist, his father being his teacher; he studied in Venice under Andrea Gabrieli, composer of choir and organ music. With Michael Practorius (real name Schulz; 1571-1621) a composer, and author of a valuable compendium of the musical knowledge of the time entitled Syntagma musicum (3 vols., 1615-19), he is regarded as a master in the period of ther. renaissance. His chief works are tier. renaissance. His chief works are church music and songs. He wrote the familiar Passion chorale, O Haupt voll Blut und Wunden, and a number of wellknown chorale melodies in the motet form. Most of his organ pieces, motets and madrigals, which are important in the hist. of Ger. music, have been republished in modern times.

Hastinapur, ruined city of India, in the Meerut dist.. United Provs., on banks of former bed of Ganges. At one time it was the cap. of the Pandava kingdom.

Hastings, Francis Rawdon (1754-1826), first Marquis (1817), a Brit. soldier and administrator, b. in Co. Down, Ireland, the son of Sir John Rawdon of Moira: later Earl of Moira: educated at Harrow and Oxford, and entered the army. From 1775-82 he was on service in the Amer. war, fighting at Bunkers Hill. Brooklyn, White Plains, Camden, Charleston, etc., White Plains, Camden, Charleston, etc., and was created a peer, as Baron Rawdon, on his return in 1783. In 1794 he fought against the Fr. in Flanders; was appointed commander-in-chief in Scotland, 1803; became master-general of the ordnance, 1806; and governor-general of India in 1813. The chief events of his administration were the wars against Nepal (1814-16) and the Mahrattas and Pindaris (1817-18). He retired in 1823, and was appointed governor of Malta in 1824. 1824.

Hastings, Sir Patrick Gardiner (b. 1881). Hastings, Sir Patrick Gardiner (b. 1881), Ing. lawyer. Edicated at Charterhouse. Elected Labour M.P. for Wallsend, 1922, and again in 1924, when he became Attorney-general for the first Labour gov. in England. Publications: (plays), The River (1925), Scotch Mid (1926), and Escort (1942), and The Autobiography of Patrick Hustings (1948).

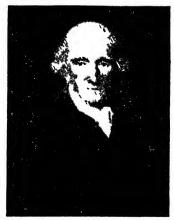
Escort (1942), and The Autobiography of Patrick Hustings (1948).

Hastings, Selina, see HUNTINGDON, SELINA, COUNTESS OF.

Hastings, Warren (1732-1818), first governor-general of India, went out in 1750 to Calcutta, where the influence of his uncle had secured for him a cadetahip in the E. India Counterly's service. He his uncle had secured for him a caceusing in the E. India Company's service. He rose rapidly, and became a person of such considerable importance that eleven years after his arrival in the country he, having already filled other posts with credit, was appointed a member of the Calcutta council. In 1764 he returned to England. Unlike most of his colleagues, had a deal made no attempt to among a private he had made no attempt to amass a private income, and had nothing but his savings to live upon, and these were so incon-siderable that they were already ex-

Belgians were defeated here by the Dutch in 1831. Pop. 29,200.

Hauster (or Haster), Hans Leo (1564
Company's offer to go out to Madras as second in council. Two years later he second in council. Two years later he was promoted to the governorship of Bongal. He now fulfilled the hopes of the directors at home, and proved himself a wise and far-seeing administrator. He instituted reforms, both in the gov. of the prov. and in the law courts, that were taken as models by his successors. upheld treaty rights and removed abuses, but was vigorously opposed by some members of his council, his most bitter opponent being (Sir) Philip Francis, whom in 1780 he wounded in a duck. In 1785,



WARREN HASTINGS

having done magnificent work, he resigned his office and returned to England. At once an agitation was set on foot by Francis and others, who enlisted the sup-port of Burke, and he was impeached in 1788 for corruption and cruelty. The trial dragged on for seven years, when he was acquitted on all counts. His exwas acquitted on all counts. His ex-penses in connection with it amounted to \$70,000, his entire fortune. Thereupon the E. India Company, very rightly, but to the great indignation of Burke, granted him a handsome peusion, which enabled him to fulfil his long-cherished dream of repurchasing the family estate of Daylesford. In later days, largely owing to the kindly influence of the Prince Regent (afterwards George IV.), he was reinstated in popular opinion, though his impeachment was never officially reversed. Mill, the historian of India, declared that few men would be found whose character would present a higher claim to indulgence than his, and this view is now generally accepted. There are biographies by G. E. Gielg, 1841, and by L. J. Trotter, 1878. See E. Gilllat, Heroes of Modern India, 1911; M. E. Monekton-Jones, Warren Hastings in Bengal, 1918; repurchasing the family estate of DaylesH. Dodwell, Letters to Sir John Mac-phereon, 1927; P. Moon, Warren Hastings and British India, 1948.

Hastings, watering place, parl., municipal, and co. bor. in Sussex, England, 33 m. E. of Brighton and 62 m. S.S.E. of London by rail On the S. it is open to the Eng. Channel, but clsowhere surrounded by high cliffs. Il. has an old and new tn., the former—described as the new burgh in the Domesday Book—between the E. and W. Hills, being chiefly in the bloomed by Torons. inhabited by fishermen. A fine prome-nade runs for 3 m. along the sea front to St. Leonardy-on-Sea, which is within the bor. Apart from catoring for visitors, ishing is the chief industry, and there is a lish mykt. Belog sheltered by the hills inland from easterly and northerly winds, H. is a well-known resort for those suffering from pulmonary complaints, in the winter and spring. The climate is dry, mild, and salubrious. There are sev, public gardens, the chief of which is the extensive Alexandra Park and the tn. Among has 410 ac, of public open spaces. Among the centres of entertainment and recreation are the White Rock Pavilion, the White Rock Gardens, and the bathing pool. Some 6 m. from H. is the great Abbey. St. Martin's of Battle, which Wm. I., to commemorate bis victory at the 'Battle of Hastings,' built on Senlac Hill, the sc. at site of the battle. If m from H. is Bodiain Castle, a splendid example of a medieval fortress, with round towers, gateway and moat. It was preceding the the pattern by the Maranase has 410 ac. of public open spaces. round towers, gatoway and moat. It was presented to the nation by the Marquess Curron in 1923. 10 m. from H. is Peven-sey Castle containing three fortresses— the coast guird fortress of Anderdia, a stone keep built by Robert of Mortain and a fort round the keep built in the thirteenth century. R. derives its name teenth century. It. derives its name from Haest for Haesten), the intrepul Dane who 1:0) years ago founded the me or settlement which, as Hastings, rose to eminence as a port during Saxon times and, in the reign of Athelstan, boasted not only a busy harbour but a Mint. It was the chief of the five ports which were ainalgamated by Edward the Confessor into the Contederation of the Cinque Ports in the Norman period it was the chosen port of embarkation and return for the Norman court when the monarches visited their continental domains. The great castle founded by Wm. the Conqueror, the rums of which dominate the tn. to-day, was the scene of many royal coremones. After John lost Normands in 1204 H. declined rapidly. The harbour was gradually silted up by the 'eastward, drift' of the sea—a process coincident with the building of bigger and yet bigger with the building of bigger and yet bigger ships drawing more water. By the fourteenth century H. was little more than a hishing vil., and its decline was accelerated in the same century through being four times sacked by marauding Fr. In its heyday H. contributed twenty ships fully manned to the Cinque Ports ravy. In 1400 its centribution was outst three. These was a bilet revised of Ports mayy. In 1400 its contribution was mazon, and Saginaw railways. Popouly three. There was a brief revival of 5000.

Hastings, Battle of, the usual name when, in 1588, H. again furnished its full given to the great battle at Senlac, near

complement of twenty ships to help fight the Armada. As a reward the queen gave the tn. its Charter and the Bailiff of H. was given the title of mayor. Attempts to reconstruct the harbour, however, failed, and H. soon sank again into obscurity. Its next appearance in the pages of hist. was during the eighteenth century—as a notorious centre for smuggling. During the latter half of the eighteenth century. the latter half of the eighteenth century, the tn.'s present reputation as a watering place was founded—a development more or less concurrent with that of Brighton. A Dr. Bailey, supported by John Collier, mayor of Hastings, publicised the air of the tn. as especially favourable for pulmonary sufferers. The H. of the sixteenth and seventeenth centuries was practically confined to what is to-day called the 'Old Town' but during the last years of the sighteenth century and the years of the eighteenth century and the early years of the nineteenth the ta rapidly extended beyond the W. Hill, and such fashionable suburbs as George Street, Pelham Place, etc., came into being. In 1827 Decimus Burton, the architect, founded St. Leonards to the W. of the tn. soon, under royal patronage, to become the most fashionable resort in the country. St. Leonards and H. gradually developed into the composite whole which is now the co. bor. of H. with a resident pop. of

65,000.

H. and St. Leonards declined somewhat during the 'nineties and the first decade of the present century owing to lack of of the present century owing to lack of enterprise; but between the two World Wars, over £4,000,000 was spent in improving the attractions and amenities of the tn. Then came the Second World War and H. from 1940 onwards found itself in the front line. It suffered 87 raids: 550 H.E. bombs and 15 V-1 rockets burst in the bor. The old parchurch of st. Leonard's was completely church of St. Leonard's was completely destroyed, and the Church-in-the-Wood, associated with Charles Lamb, was dam aged. Nearly 16,000 properties were destroyed or damaged-more than two-thirds of the bor.'s total. The pop. at its lowest ebb, fell to 15,000. The whole front was, however, transformed into a tremendously strong defence line. In 1944, evacuees returned in fairly large numbers, and in 1915 the pop. had reached 44,000. Be tween May 1945 and May 1948, 21,000 people were re-housed and the pop. prac tically re-estab, at its pre-war level.

Hastings: (1) Bor. of Now Zealand.
N. Island, in Hawkes Bay co., 11 in.
S.S.W. of Napier. Its industries are of an agric. nature and there is a canning factory, the largest in New Zealand. Pop. 22,000. (2) ("ity of Nebruska, U.S.A., in Adams co. It has an altitude of 1917 ft., and is 130 m. W.S.W. of Omaha. It is served by four reliwary and is a shipping. served by four railways and is a shipping centre for grain and live stock. It is the seat of Hastings College and a Catholic Academy, Pop. 15,100. (3) City in Michigan, U.S.A., cap. of Barry co., on Michigan Central, and the Chicago, Kala-



Hastings, where Wm , duke of Normandy, defeated the Eng under Harold in 1066. The battle took place on a hill, to which a later chronicles gave the name of Scolac, about 6 m from Hastings On its sum mit was firmly posted Harold & force the Normans being ranged in three divs, the centre one of which was commanded by the duke bimself. The Normans were repeatedly driven back by the Eng, but at length, by a feigned flight, the latter were drawn from their stockade, and routed

Hastings Beds or Sands, part of the Lower Cretaccons series and a lower div of the Wealden beds. They vary in thickness from 500 to 1000 it, and consist mainly of sand and sandstone with subordinate layers of clay. They have the steer in the sand the strata, which differ only slightly from those of the over lying Weald clay, are highly fossiliterous

land, 6 m 1 of Durham Prop 6000 Hat, covering for the head like all articles of apparel, has a bist, and if you intere for to trace its gradual

evolution from earliest times in the simple evolution from earliest times in the simple close-fitting cap to the many elaborate structures supplied by the demands of a twentieth century civilisation. The word II comes from the A 3 hot, and Ger. If ut, hat The A 5 hot consisted of a woolkn cap, and was worn by the higher class of the A. S. But centuries before this time caps or coverings for the head were worn amongst the Oriental nations, when they had a certain religious significance, as in the case of the 'pilos' worn by the Jewish levitical priest It is conjectured that the oldest head covering was the circular close-fitting cap, either was the circular closs-norm, some plan or braided, which was worn by captive from Palestine in Assyria, and which also appeared on the heads of various duties among the heathen tribes There were two kinds of headcovering worn by the cks in carly times, the pictus, and the pictus, The pileus had no brim, whilst the pictus was made of felt, and had a wide brin to protect the igning Weald Clay, are nightly fossiliterous of felt, and had a wide bring to protect the and contain numerous saurian reptiles weater from the rays of the sun. The and the remarkable lepidotus and the research to be said to be the direct besides the remarkable lepidotus and the research to the Gk petasus, but did not be longing to the ganoid or plucoid to a tree into voge in England till the order.

Haswell, in in the coof Durham, Eng to desire the line of the time of the Norman conquest the Physical cap flat bounct, and bringmed H were won. With the divance of centuries new fashions cropt articles of apparel, has a bist, and it is an adopted from intercourse with other volve intermaliance. This is especially noticeable in nations

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79	Woman - Hat	1445
,	Woman's Hat	1949

Tudor times, where we meet with wide change almost from season to season. Hs. crowned with plumes and feathers. For the last few years the tendency has and with low-crowned caps with upturned been for hats to be worn well to the back brims. Beaver felts in many shapes came into vogue in Queen Elizabeth's reign, and into vogue in Queen Elizabeth's reign, and were the common form of head covering for three centuries. That the H. has played its part in the making of hist, is evident from the fact that in the Civil war in Charles I.'s reign, the distinguishing feature of the Roundheads or Puritans was the high-steepled H. of plain felt, whilst the Cavaliers' head-covering was adorned with feathers. A century later the three-cornered cocked H. became the prevailing fashion, owing, no doubt, to prevailing fashion, owing, no doubt, to the necessity of looping up the extrava-gant width of the brim. At one time felt Hs. were manufd, exclusively of beaverfur, but the scarcity of this animal made it necessary to use other materials such as fur, a mixture of fur and wool or wool only. The fur or hair of rabbits, beaver, musk-rat, and camel was used for the finer Hs., whilst sheep's wool was used for the inferior felted Hs. The cheapest for the inferior felted Hs. The cheapest kinds of felt were also made with wool mixed with cotton and other vegetable fibres; in this case they were not really felted, but cemented by varnish which helped to hold together the fibres and to stiffen the H. body. The manuf. of the silk H., a stiff body with a covering of a plush of silk, almost universally worn by men of the unper and middle classical during the silk of the unper and middle classical during the silk of the unper and middle classical during the silk of the unper and middle classical during the silk of the unper and middle classical during the silk of the unper and middle classical during the silk of the unper and middle classical during the silk of the s men of the upper and middle classes during the Victorian and Edwardian eras, began early in the nineteenth century in England. It was invented in Florence about 1760, but the fashion was not accepted till half-a-century later. Its manuf. was not introduced into France till about 1825 and its development has taken place entirely since that date. Now, after a century-and-a-half, the silk tile, or tophat, has gradually gone out of use except for ceremonial occasions. In the days be-fore the Second World War grey top-hats were worn at Ascot and at other fashion-able events. The folding, or collapsible opera-hat, made of dull material, was used with evening dress for theatre-going etc. in the early days of the contury. Before the the early days of the century. Hefore the late war the blocked black felt homburg hat, known as the 'Anthony Eden' was worn with evening dress by younger men; and also very considerably by day as well, with tn. clothes. For golf and walking rather large tweed caps, often with check pattern, were affected in the thirties (a fashion sponsored by the duke of Windsor, as was the wearing of the small Basque beret). Berets continue to be worn by men for country pursuits, often those made familiar during the war years—the nirborne and tank corps berets. The hard felt bowler hat, wern very widely in the early part of the century, has gone almost completely out of fashion and has been superseded by the soft felt hat, or the blocked homburg. The agric, worker or farm labourer continues to wear a cap when working, often of a small, old-fashioned type, although the average young man walking in the country goes hatless. men for country pursuits, often those made hatless.

of the head; small round caps, felt bonnet shaped hats, large cartwheel shapes. Triminings are varied—veiling, ribbon loops and bows, flowers of all chapes. Trimings are varied—veiling, ribbon loops and bows, tlowers of all descriptions, and now feathers, have been introduced in an attempt to soften the rather severe plain styles which were worn during the 1939-45 war years, if indeed hats were worn at all. During the war years most women, at any rate the younger women, went hatless and instead of buying new hats as they had done in the past went in for elaborate and varied hair styles. It was quite a common and hitherto unusual sight to see smart and hatless women in the West-End of London. Those who wished to have their heads partially covered used to twist scarves round their head to form a sort of bandeau, leaving the crown of the head uncovered, or tied triangular scarves under the chin in peasant fashion: this style possisted and became almost a uniform in many and became almost a uniform in many parts of the country, probably because it is practical and tidy in all weathers. The difficulty of buying Hs, and the resulting practice of going halless resulted in a relaxation in many churches of the enstorn of admitting women only when their heads were covered. Light weight felts are taking the place of straw hats for summer wear.

wear.

Hatay, Turkish name for the Sanjak of Alexandretta (q.r.).

Hatfield, or Bishop's Hatfield, mikt. tn. of Hertfordshire, England, on the Lea, 171 m. from London by rail and 64 m. W.S.W. of Hertford. Apart from Hatfield House (q.r.), there are the ruins of a palace, once the residence of the bishops

palace, once the residence of Ely. Pop. 7000.

Hatfield, vil. of Yorkshire (W. Riding),
England, on the Don, about 7 m. from Doneaster. With the opening of coalmines the vil. has become a prosperoucolliery centre. Hatfield Chase, the dist. around the vil., was once a forest and hunting ground of kings. This forest lay between the rivs. Don, Idle, and Thorne. A great part of it was marsh, and in 1626 it was drained by Dutch engineers.

Hatfield Forest, 3 m. E. of Bishop's Stortford, Essex, with 1049 acs. of rolling country and some pine tunber. It was part of the Royal Forest of Fssex main-tained from Tudor times till 1915. It includes an auct, camp at Portinbury Hills. and a lake for boating and fishing.

Hatfield House, Hertfordshire residence of the marquess of Salisbury and one of the finest Jacobean houses in England. the finest Jacobean houses in England. Stands in a park some 10 m. in circumto bowler hat, worn very widely in the representation of the century, has gone almost purpletely out of fashion and has been appeareded by the soft felt hat, or the perseded by the soft felt hat, or the preseded by the soft felt hat, or the soft felt hat consists to day of three wings, a main north wing, with the collection. In the soft felt hat, or the soft felt hat the down and the materials used for the foundations of the house which was built between 1607 and 1611, with Robert Lyminge as architect. The features of the house are the lofty marble hall, which contains the original panelling, a finely-carved musiciaus' gallery, and a number of portraits, including two of Queen Elizabeth. There is a third portrait (by Curcary) of the gueen, at the foot of the Elizabeth. There is a third portrait (by Zuccaro) of the queen, at the foot of the grand staircase, with its gracefully carved newel posts topped with cherubs and heraldic animals. Near the head of these stairs hangs one of the very earliest Eng. sporting paintings—the picture of Queen Elizabeth's white horse and its groom dated 1593. In the long gallery, which runs above the marble duning hall, is a carved oak cupboard containing Elizabeth's genealogical tree, tracing her beth's genealogical tree, tracing her ancestry back to Adam. In James I.'s drawing-room so called from the statue of him above the freplace, are family por-traits by Romnoy, Reynolds and others, and a fine Wilkle portrait of the duke of Willington. All along the S. side of the first-floor runs the panelled Long Gallery; and from the windows is a tine view of the

and from the windows is a line view of the formal garden and maze. See J. S. Brewer, Enalish Studies, 1881.

Hath vay, Anne (1556-1623), wife of Wm. Shakespeare. She was probably Agnes, daughter of Richard Hathaway, of Shottery, near Stratford-on-Avon, where the Hathaways' cottage still where the She was married in 1582, about six months before the birth of her daughter Susannah, May, 1583. Her only other children, Judith and Hannet (twins), were

born 1325. Hamnet died in 1396, Under her husband's will, Anne took only his second-hest bedstad. Hathersage, vit. of Derbyshire, about 34 m. from Manchester and 161 m. from London, on the Midland Region railway. Around the vil. is some of the fine-t of the Derbyshire scenery. Little John, hench-man of Robin Hood, is traditionally supposed to have been buried in the churchyard. Pins and needles are made here. Some 3 m. S. of H. is Froggatt Wood, purchased in 1939 by the Shettleld and Peak Dist. Branch of the Council for the Preservation of Rural England.

Hathor, see ATHOR.

Hathras, tn. of India in the United Provs. An important commercial centre.

Pop. 40,000.

Pop. 40,000.

Hats and Caps, name given to two political parties in Sweden, which existed of thirty-five years. The Hats, under Tossin, were in power in 1738, but were ousted by the Caps twonty-seven years later. The Caps then reigned for three years, from 1766 to 1710 when they had to make way aguin 1760, when they had to make way again for the Hats. The Caps reconquered in 1771, but both parties were abolished in 1772.

H. H. was given to Robert Cecil, first early reigned in Egypt as regent for her of Salisbury, in exchange for Theobalds. Two wings of the palace were then pulled down and the materials used for the foundations of the house which was built at Thebes, as well as many other monuments.

Hatsilisi, see Nikko.

Hatteras, Cape, in N. Carolins, U.S.A.. at the end of a long sandbank or is. separated by Pamlico Sound from the mainland. Violent storms often occur, producing a heavy sea, which makes the inlet dangerous to navigators.

Hattaria Physicate see Spuryopox.

Hatteria Punctata, see SPHENODON

PUNCTATUS.

Hattlesburg, cap. of Perry co., Missouri, U.S.A. It has foundries, cotton-seed oil mills, machine works, etc. Pop.

21,000.

Hatto I., archbishop of Mainz, came of a Swablan family, and obtained his arch-bishopric under Arnulf, a Ger. king, in 891. He was so popular with this mon-891. He was so popular with this monarch that he received the nickname of 'the heart of the king.' Upon the death of Arnulf, in 899, H. was appointed regent of Germany and guardian of the young king Louis. He exercised his power in a very arbitrary way, and was guilty of many crimes in the course of his career. This, no doubt, accounts for the legend of his being thrown into the crater of Mount Etna. He died in 913.

Hatto II., was archibshop of Mainz from 968-970; bis name is associated with the legend of the Mouse Tower at Bingen, where he is reported to have been de-

voured by mice.



SIR CHRISTOPHER HATTON

Hatton, Sir Christopher (1540-1591), kng. statesman and lord chancellor, b. at Holdenby. Was the reputed favourite courtier of Queen Elizabeth, through whose influence he became lord chancellor Hathersu, or Hatshepsut, queen of the eighteenth Egyptian dynasty, daughter of Thothmes I. and sole heiress to the Egyptian throne. For fifteen years she in 1587—a remarkable appointment in view of the fact that he was not a professional lawyer. Very little is known of his career which is what might be expected in the case of a man whose success was due chiefly to his social qualities. He was educated at St. Mary's Hall. Oxford, and kept terms at the Inner Temple; but instead of following the law, he played the courtier, and, it is said, first attracted the queen's attention by his dancing at a masque. In J. C. Campbell's Lives of the Lord Chancellors (1868), he is described as a 'gay young cavalier, never called to the Bar, and chiefly funed for his handsome person, and his skill in dancing.' He appears, however, to have had sufficient natural capacity to acquit himself without disaster on the Woolsack; and sev. legal treatises, such as A Treatise concerning Statutes or Acts of Parliament, are ascribed, though not by lawyers, to him; and some attribute to him the authorship of the fourth act in the tragedy of Tuncred and Signsmunds. His death was the result, according to some historians, of 'a broken heart' through the queen's demanding payment of a debt queen's demanding payment of a door which he was unable to meet. Sec N. Harris Nicholas, Life and Tunes of Sir Christopher Hatton, 1847.
Hatton, John Liptrot (1809–86), Eng musical composer, b. at Liverpool. After

holding many appointments as organist in Liverpool, he came to London in 1832, ten years later he was appointed conductor of Drury Lane Theatre, where his own operetta, Queen of the Thames, was produced. Some years later he was the accompanist of the St. James's Hall Ballad Concerts. He also composed the songs, Goodnight Beloved, Sunon the Cellarer, and

To Anthea.

Hat-trick, in cricket, the name given to the feat performed by a bowler who takes three wickets with three successive balls, not necessarily in the same over. Tho term may have originated from the practice of giving hats to successful sportsmen, notably wreatiers, but is more likely to have come from the handing-round among the spectators of a hat for the purpose of making a collection of money for the player who has shown his provess.

Hattushash (modern Bogaz Koy), cap. of Hittite (q.v.) ompire.

Hatvan, tn. of Hungary, 30 m. R.N.L. of Budapest, with a large castle. Pop. 9500.

Hatzfeld, see ZSOMBOLYA.

Hatzfeld, see Zsombolya.
Hauberk, see under Armour.
Hauberk, see under Armour.
Hauch, Johannes Carsten (1790-1872),
Dan. poet and dramatist, b. at Fredenkshald, Norway, of Dan. parents. In 1816
he became prof. of Scandinavian languages at Kiel: in 1848 returned to Copenhagen, and from 1858 60 was director of the Dan.
National Theatre. His works include collections of Poems (1842), and of Lyrnal Poems and Romances (1861), Valdemar Seir (1862, an instorical epic), and some very fine tragedies produced between 1841 very fine tragedies produced between 1841 and 1866, including Svend Grathe (1841). The Sisters at Kinnekulle, Marshal Sig (1850), Honour Lost and Won, Tycho Brahe's Youth, The King's Favourite, and Henry of Navarre. He was one of the group of romantics around Ochlenschlager. Hauff, Wilhelm (1802-27), Ger. author, b. at Stuttgart. In 1826 he produced b. at Stuttgart. In 1826 he produced Lichtensteen, an historical novel in the

tradition of Sir Walter Scott, which became very popular. His other work includes: Mittelungen aus den Memoiren des Satan (1826), Bettlerin von Pont des Aris (1826), Phantasien im Bremer Rats-keller (1827), and Marchenulmanach auf das Jahr 1820 (1826), and some short poonis.

das Jahr 1826 (1826), and some short poems. See Tidemann. Hauff in Bremen, 1929.

Haug, Martin (1826-76), Sanskritist, entered the univ. of Tubingen in 1848, where he studied the Oriental languages. He went to India in 1859 as prof. of Sanskrit at Poona. Bosides writing Essays on the Sacred Language, Writings, and Religion of the Purses (1862), he pub. valuable material for all students of the Interatures of anct. India and Persia. and Persia.

Haugesund, scaport in Norway, 36 m. N.W. of the tn. of Stavanger. Its harbour

is from 17 to 50 ft. in depth. It has important isheries. Pop. 18,000. Haughton, William (c. 1575-1605), Eng. dramatic writer of the seventeenth century who collaborated in many plays with Henry Cheetle and Thomas Dekker. Philip Henslowe mentions in his diary how he helped to release H. from 'the Clink by a loan of ten shillings. He is supposed to have written the greater part of The Picasant Comodie of Patient Grissill (1603).

Haulbowline, is. S. of co. Cork, Ireland, situated in Cork harbour, opposite Queenstown It has a convict station, artillery barracks, and various ordnance works

Haumt-es-Suk, see unager JI.RBA. Hauptmann, Gerhardt (1362-1946), Ger. dramatist, not clist, and poet, b at Ober-sulzbrunn, Silesia, son of a hotel-keeper; educated there and at the Realschule in Brosian He worked for a time on a farm at Janer, and then returned to Breslan to study art, continuing his education at Jena Univ. and settling in Rome in 1883-1831. In 1888 he married and settled to literary work in Berlin. In 1891 he retired to schreiberhau, silesia. Lis first retired to schreibernau, Shesia. Lis histonotable play, Vor somenaufyang (*Befole Simirse', 1849), a ploneer of the movement towards realism reproduced the harshness and debasement of Silesian peasant life; this was followed by Emsane Menschen (*Louely People, 1891). and then came his most famous play, Die Weber ('The Weavers,' 1892), which dealt with the rising of the Silesian weavers in 1814 and was banned by the Licencer of Plays His much proised play, Die Versunkene (Hocke ('The Sunken Bell, 1896) is a poetic visionary dream not however devoid of external truth. Hannele, a drama on the fevered vision of a child, a Grama on the fovered vision of a child, was produced in 1894, followed by realistic social and historical dramss, including Fuhrmann Henschel (1898), and Der Rote Hahn ('The Scarlet Hen,' 1901). Ho wrote but few connectics, among them being Der Biberpele ('The Beaver Cape,' 1893). He was awarded the Grillparzer Delto in 1898 and \$1905 was made as 1939). He was awarded the Griffparzer Prize in 1898 and in 1905 was made an honorary LL.D. of Oxford Univ. His later work is allegorical in treatment, with experiments in the supernatural bordering on the irrational. In 1911 he wrote a religious novel. Der Narr in Christo: Emanuel Quint, and a long solemn pretentious philosophical poem, Till Eulenspiegel (1925), which represents a Ger. flying officer as prototype of the heroic Ger. character. In 1912 he was awarded the Nobel Prize for literature and he received many honours in Germany but his increasing submission to the Nazi regime adversely affected his subsequent work. Prolific and poetical and, con-sistently serious in all he wrote, H as a dramatist is too abstracely romantic and wanting in human warnth, and, though wanting in hillian warmth, and, though ho was early influenced by the realism of Flaubert, Zola, and Ibsen, the manifest trend of his outlook was speculative, visionary, and symbolical. See his autobiography Das Abenteuer memer Jugend, (1937), and study by E. Sulger-Gebing, 1909; also II. Marschan, Das Muteut bet Hauptmann, 1919 and H. Cysarz, Sieben Wesensbider. 1913. Wesensbilder, 1913.

Hauraki, gulf of the Pacific in North Is .. New Zealand, 70 m. long and 40 m. broad It has sev. excellent harbours, the tn of Auckland being situated on that of Waltemata, and it also contains many well-

wooded 19. A good outer breakwater is formed by the Great Barrier 19.

Hauran (Heb. chauran, the hollow land, so called from its numerous caves), dist in Syria, comprising the mountainous plateau extending in the E. from the Jordan and and sea of Therias. It consists of mt. ranges and large plains, with scattered eninences rising steeply from the valley of the Jordan to a height of about 2000 ft above the Mediterranca. It is full of the romains of anct cities and various monuments of the Gk and Rom The whole country is inhabited periods only by wandering Bedouins and a few colonies of Druses.

Hausas, Houssas, or Haussa, W African race, inhabiting a dist. of about 50,000 ag. in in the W and Central Sud in from the R Aiger to Bornu and including N. Nigeria. They represent a very high negro type, and have a strong admixture of Arab and Fula blood. The skin is very black, but the hips less that and the hard less woolly than in most negroes. I is men are of medium height, heavily built. and of great physical strength and endorance. Their language, which has a very wide range, is notable for its rich vocabulary. It belongs to the Hamitic group. and a large proportion of the words are connected with Arab and Semitic roots, thus tending to verify the native tradition that the origin of the race was beyond Mecca to the k The language, which has become a lingua franca over a wide are i has been reduced to writing, in modified Arable characters, by the natives them Arable characters, by the natives them selves, and there is a certain amount of native literature. The Bible has been trans, into Hausa. The H. are a most industrious people. They are excellent agriculturists, have for long mined iron, tin, silver, lead, and salt, have developed numerous industries, including spinning, weaving, dyoing, and working in teather and glass, Kano, Katsena, and Yakoba are the chief centres. Their staple tood is uninea conn. Kanilly hand shouldness are:

clearly delimited, the whole Hausa country being covered with small holdings, clearly country being covered with small holdings, ranging from 1 to 4 ac. The tenure remains one of user only, but the transfer of this right, subject to the sanction of the Emir, is now recognised by the native courts in Kano and Hornu. Though naturally peaceful, the H. make excellent soldiers. Since the early part of the nineteenth century their political significance in Nigeria has given way to that of the Fulani (see under FULAIS). The popwhich numbers over 5,000,000, is predominantly Muslim. See C. H. Kobinson, Hausaland, 1896; and Inctionary of the Hausa Inctionary, 1935; G. P. Bargery, Hausa Dictionary, 1935; C. K. Meck, The Northern Tribes of Nigeria, 1925; W. Miller, Yesterday and townrow in Northern Miller, Yesterday and tonyrow in Northern Nigeria, 1938; Lord Hailey, An African Survey, 1938; Sir A. C. Burns, History of

Nigeria, 1943.

Haushofer, Karl (1869-1946), founder of Ger, geopolitics (q.v.), b. at Munich. He travelled in S.E. Asia between 1887 and 1919 and became prof at Munich in 1921 His theories had much influence on the world-domination policies of the Nazis.

world-domination policies of the Nazis,
Haussman, Georges Eugene, Baron
(1809-91), builder of modern Paris, b. in
Paris, He was educated at Collège
Henri IV., and studied for the law. In
1830 he became sous-p.éfet of Norac,
from 1849-51 was successively prefect of
Var, Yvonue, and Gironde, and in 1853
was made prefect of the Stone by Louis was made prefect of the Seine by Louis Apoleon, who had vast schemes for the embellishment of Paris. The improvements carried out by H transformed l'aris, ments carried out by it transformed Parts, but their cost, which amounted to £34,000,000, led to considerable opposition, and in 1876 he was forced to resign by the got, of Emile Ollivier. In 1877 he became Bonapartist deputy for Ajaccio See his Memoires (1890 93)

Hauthois, or Hauthoy, see Obox. Hautecloque, Vicomte de, see LECLERG

DE HAUTECTOQUE, PHILIPPE.

Hautefort, Viscount of, see BERTRAN DE HORY.

Haute-Garonne, see GARONNE, HAUTE-. Haute-Loire, or LOIRI, HAUTE-Haute-Marne, or MARNE, HAUTE-Haute-Saone, see SAUNI., HALIE-. Haute-Savoie, see Novie, and a Haute-Viene, see NENN, HUTE-Hautes-Alpes, see Alpes, Hautis-Hautes-Purénées, see Pirenées Haute-Savoie, we Savoit, Hattle HALIL-

Hautmont, to of dept. Nord, France on the R Sambre, 18 m. S.E. o. Valen-ciennes. Pop 11,100.

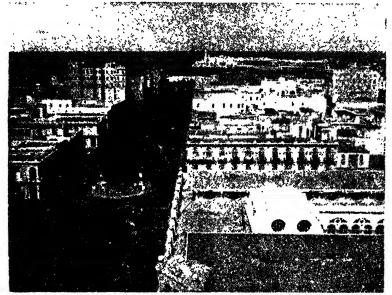
Haut-Rhin, see Rhin, Haur-, Hauty, Rene Just (1712-1822), Fr. physicist and minoralogist. In 1781 h. discovered the geometrical law of crystal lisation associated with his name, which native interstine. The Bible has been trans, into Hausa. The H. are a most industrious people. They are excellent agriculturists, have for long mined iron, tin, silver, lead, and salt, have developed numerous industries, including spinning, waving, dyeing, and working in leather and glass. Kano, Katsena, and Yakoba are the chief centres. Their staple tood is guines corn. Family land-holdings are [6, Cavier, 1823]. See life by in guines corn.

Haüy, Hauy, Valentin, sec Institutions for the blind.

Institutions for the blind.

Hallynite (or Hallyne), rock-forming mineral, named in honour of the Fr. mineralogist, Hally (q.v.), consisting of silicates of aluminium and sodium, or aluminium and calcium, together with modum and calcium sulphates. It is a beginn and calcium sulphates. addination and calcium sulphates. It is a vitreous, translucent substance, having a conchoidal fracture, a hardness of 5 to 5·5 and sp. gr. 2·2 to 2·5. It occurs in sky-blue, green or yellow cubes, crystal-lising in dodecahedra. The crystals often

under BLIND, rock-forming our of the Fr.), consisting of and sodium, or together with ohates. It is a tance, having a ridness of 5 to 5. It occurs in cubes, crystals often within the shelter of the harbour, which is within the shelter of the harbour, which is



HAVANA: THE PRADO AND MORRO CASTLE

E.N.A.

contain symmetrically arranged inclusions (of other minerals, so that the precise composition of H. is not yet certain. Frank Rutley thought that H. and nosean (q.v.) were mere varieties of the same species and X-ray examination has revealed its essential identity with nosean, sodalite, and the artificial ultramarines. Lapis lazuli is a member of the same group. On heating in the blow-pipe H. melts to a glass, whilst noscan only melts at the edges; both, however, are gelatinised with acids. II. occurs in volcanic rocks and especially associated with nepheline and leucite. It is found in Mount Somma, Puy de Dôme, Mount Vesuvius, the Laacher See near Koblenz, and elsewhere.

divided into three distinct arms or bays, called Regla Bay, Guanabacoa Bay, and the bay of Atarés. The approach to H. from the sea is impressive, and beyond the surf-heaten coast the first con-spicuous objects to strike the eye are the historic Morro Castle, whose venerable fortifications command the narrow bottlenecked entrance to the harbour, and its tall lighthouse, orected in 1844 by Gover-nor-General O'Donnell. The Morro ('promontory'), erected on the left-hand side of the harbour, between 1589-97, is partly hewn out of the rock and partly constructed of solid blocks of rock, this Puy de Dôme, Mount Vesuvius, the giving it an irregular appearance. Its Laacher See near Koblenz, and elsewhere. It has occasionally been cut as a gemestone.

Havana, cap. of the is. of Cuba, and one of the most important seaport the. It landing was made on June 7 to the E. of was named by its founder, the Adelaninvested by land and sea, the Sp. fleet of twenty ships remaining in the harbour just as Adm. Cervera's ships were to do in 1898. The defence, after the Eng. had entered the fort, was gallant in the extreme, Velasco, the gov., being resolved to die rather than ask for quarter, and a battery to the E. of the castle perpetuates his memory. On the right is La Punta, another fort. Round the seaward side of another forc. Aboung the seaward said the city is the fine driveway on a sea-wall, called the Malecon, with its gardens and handsome bandstand. Beyond the Morro on the left are the heights forming an amphitheatre S, and W. of the city, some of the hills being 1000 ft. high and crowned the contract the c of the fills being 1000 ft. high and crowned with fortifications known as the Cabanus, built in 1763-74. The fortress 'Castillo del Principe' is entered by a massive gateway approached by a drawbridge. It was in this harbour that the Amer. cruiser Manne was blown up on Feb. 15, 1898, when 270 men and 2 officers were killed, this being the immediate cause of the Sr. American the Sp.-Amer. war. In 1912 the Maine was raised, towed out to sea and sunk. Many improvements have been effected in H. since the U.S.A. military occupation, notably in the way of wider thorough fares, better built houses, and general sanitation. Yellow fever, a very prevalent epidemic, was found to be caused beauty the title of the sanitation. through the sting of a mosquito (Slegomsia), and resultions were taken to

remove the cause of offence.

The chief trade of H. is the tobacco industry, and there are numerous cigar factories. Sigar is also one of the prin products. There is an extensive export trade in sugar, tobacco, clears, grape fruits, and other products. Trade is chiefly with the U.S.A., Great Britain, and trance. There are sev important public buildings, such as the Palace, the Exchange (El Mucble), and the custom-house. The handsome railway station of the United railways of Havana is near the S of the city where once stood the arsenal. of the city where once stood the arsenal.

A series of parks and avenues cross H.

from S. to N., following closely the
direction of the old walls. From Parque
Fraternidad, the Prado, or Pasco de
Marti, a boulevard of laurel trees, extends
to the Malecon. Farmy Central Park Me
the handsome Capitol, crowned by a
white dome, and the National Theatre,
which can sent an anglesce of 2000 which can seat an audience of 3000 Obispo (Bishop) and O'Reilly Streets, narrow and hydhy picturesque, and the chief shopping centres, run parallel to the old Presidential Palace in the Plaza de Armas. O'Reilly Street was named after the Sp. general who entered the city by it the Sp. general who entered the city by it while the Ring, left by Obspo Street when the city was given back to Spain at the end of the Seven Years' war. To the N. of the Plaza de Armas is La Fuerza, reputed to be the oldest fortress in the New World, and erected by Hernando do Soto in 1519. On its tower is the Habana, Soto in 1919. On its tower is the Habana, a figure emblematic of the city. On the W. side of the Plaza is the Cabildo (q.v.) or Ayuntamiento, or City Hall, in Sp. times the residence of the Captain-goneral. At the N.W. corner of the Plaza is the Supreme Court of Justice, once the resi-

dence of the archbishop and, later, the Senate House. The cathedral, dedicated to the Virgin of the Immaculate Conception, is near the junction of Empedicate and San Ignacio Streets. It was built in 1704 by the Jesuits, with twin towers and massive walls. H. has a National Library, schools of arts and trades, a fine univ. and sev. secondary schools, etc. H. is the terminus of the air-mail and passenger planes from the ILSA, and a station ger planes from the U.S.A. and a station for the air connection S.E. to Haiti. Central America, etc. It is the terminus of the chief railways of the is, and has an excellent steamship service with the leading Amer. and European ports. Pop. 673,300. The prov. of H. has a pop. of 1,235,900.

Havana, Declaration of, made by the Pan-Amer. Conference, July 30, 1940, vetoing the transfer of the colonial dependences of non-Amer. countries in the W. Hemisphere to other non-Amer. countries. The aim of the declaration was to prevent the seizure of Fr., Dutch, or other European colonies by Germany or Italy. The Conference arranged that if any transfer were attempted the possessions might be jointly administered by the Amer. republics, at least two-thirds of the republics participating, until such time as their definitive gov. should be decided by the free determination of their people. Any sudden attempt at seizure would be net by the U.S.A. acting in the defence of the continent of America. An other resolution recommended marketing agreements, including loans to producers. to keep stocks of S. Amer. commodities off the Ger. and Ital. mikts.—the agroe-ment to be financed by a 500 million dollar fund of the Amer. Import and Ex-

port Bank.

Havant, tn. of Hampshire, England, near the head of Langstone Harbour Near it is the is. of Hayling. It has brewing and tanning industries, and manufs, parchment. Pop. with Water-

Handlis, parchiment. Fop. wash water loo, 28,300.

Havel, riv. of Central Germany, rising in Lake Dambech, Mecklenburg, and flowing into the Elbo just above Witten burg after a course of 221 m. It is largely canalised and joined to other rivs. and lakes by canals.

Havelock, Sir Henry, (1795-1857), Eng. soldier, entered the army in 1815, and went soldier, entered the army in 1815, and went to Indu with the 18th regiment eight years later. He served in the Burmese war (1824-26), and was aide-de-camp to Sir Willoughby Cotton in the Afghan war of 1839. During the next years he rose steadily in his profession, and saw much active service. In the Indian Mutiny, dur-ing the last year of his life he went world. ing the last year of his life, he won world-wide renown. He captured Cawnpore and July, and was promoted maj.-gen.; and in the next few months effected the relief of Lucknow. A few days later he died. He had in Sept. been made K.C.B., and, before his death was known in this country, was created a baronet and granted a pension of £1000 a year. See life by J. C. Marshman, 1860.

Havelock the Dane, see under English

LITER LTURE.

Haverfordwest, seaport of Pembrokeshire, S. Wales, on W. Cleddau R., 6 m. N.E. of Milford. It is a contributory parl, and a nouncipal bor, and a co. of itself, having a lord-lieutenant. There are coal-mines. The tn. was settled by the Flemings in the roign of Henry I. The Grammar School was founded in 1613; the parochial Grammar School was founded in 1818. Pop. 7000.

Haverhill, (1) Mill. tn. in Suifolk, England, on the borders of Essex and Cambridgeshire, 184 m. S.E. of Cambridge on the Hom. road known as the Via Devana. Few relics of antiquity are left in the tn.

Few relies of antiquity are left in the ta. as it was largely destroyed in a disastrous fire in 1665 in which the fine fourteenthdetermined in the line follocolding iffeculty-century par, church was much damaged; it has since been completely restored and enlarged. The manor house, now the vicasage, is of seventeenth-century date and contains some fine panelling. To the S.E. are some scanty remains of an earthwork known as Haverhill Castle. Two m. to the S. is Kedington with its church noted for its wonderful collection of tombs and fittings dating from the thirteenth to the nineteenth centuries. There are manufs, of ready made clothing (dating from 1784), heavy hand-made gloves, hair canvas for stiffening coats and fibre mets. Other industries are the manuf. of agric. implements and brushes, manuf. of agric. Implements and prushes, and there are also a rope works and a large flour mill. Pop. 4150. (2) City in Essex (o., Massachusetts, on I. b. of the Riv. Merrumac, 33 m. N. of Boston. It is connected with Bradford by a bridge. H. is the bp. of the poet Whittier, who was educated at the academy in the tn. The perm business of the place is the manuf. of prin. business of the place is the manuf. of

brin. business of the place is the maint, or boots and shoes. Pop. 46,700.

Haverstraw, vil. of Rockland co., New York, U.S.A., on the R. Hudson, 35 m. N. of New York, qverhung by limestone hfts. Pop. 5900.

Havildar (lindu haweldar), non-com-missioned officer attached to a native regiment in India. The rank corresponds to that of a sergeant in a European regiment.

Havre, or Le Havre, scaport in I rarce. is second in inportance to Marscilles. It is the cap, of the airon, in the dept, of Seine Inférieure, and is situated on the N. slue of the estuary of the Seine, being distint 113 m. from Paris, and 55 m. from Rouen. The larger portion of the tn. stands on the level ground surrounding the estuary, but the richer quarter is situated on the heights of La Côte. The basine or docks of Le Havre form a triangle in shape, and are entered by means of the Outer Port. There are nine basins, the oldest dating back to the seventeenth century. In recent years anseventeenth century. In recent years another new entrance was made by means of two breakwaters, whilst the Tancarville Canal germits riv.-boats to approach the port direct, without attempting the estuary of the Seine. The chief basin are the Basin Boliot, and the Basin de l'Eure. This port trades with all the chief European ports, with America, Africa, and the W. Indies, Its chief imports are cotton, woollen goods, silk,

wheat, sugar, and coffee, whilst its exports are Fr. manufactured cloths, wine and spirits, and agric, and dairy produce. H. is noted for mechanical engineering and is noted for mechanical engineering and shipbuilding trades. Its name was origin-ally Havre de Grâce, because a chapel was built in 1516, dedicated to Notre Dame de Grâce. The chief buildings were the hôtel-de-ville, the law courts, and the exchange, but these and other and the exchange, but these and other buildings were seriously damaged or destroyed in 1944. H. was used as a base and place for landing troops during the First World War, and the Belgian Gov. transferred their headquarters here. Trade, which had decreased since that War, had attained its previous standard prior to the outbreak of the Second World War.

H. was occupied by Ger. forces after the collapse of France in 1940. It was frequently bombed by the R.A.F. in 1940 and the succeeding years. It proved a thorn in the Allied side during the building of the invasion forces in Normandy, Ger. mine-laying aircraft and surface creft based on the northeing with ward on the northeing with ward or the northein ward ward ward or the northein ward ward or the northein ward or the craft, based on the port, being awkward enemies. Attacks by Ger. light coastal craft, such as 'E' and 'R' boats, based on II. and on Cherbourg were made by the Gers, with a persistence equal to that of their air mine-laying effort. After Cher-bourg fell a number of 'E' boats were sent to Brest, and the chief menare to the Allies then became concentrated at II., from which operations were directed primarily against Brit, anchorages. But successful attacks were made by Bomber Command against the docks, sinking a number of 'E' boats and other craft at their moor-ings. H. was cut off when the Albes had crossed the Seine (Aug. 1911), but the tier, garnson rejected an ultimatum to surrender on Sept. 1 and the city was then surrender on Sept. I and the city was then invested by the Allies. Attacks were supported by heavy aerial bombing during which more than 11,000 tons were dropped on the city, half this total being dropped on Sept. 10. On Sept. 10 also the linal ground attack was launched by the Brit. 19th Infantry Div. operating with the Canadian First Army under Gen. Crerar. This attack was supported by naval forces including the battleship II arante and the This action was supported by havai forces including the battleship it around and the monitor *Erebus*, which bombarded Gerintaliations with 300 rounds of 15-in. shell. By noon on the 11th the N. and E. outskitts of the city had been reached and by midday on the next day the city surrendered with its garrison of 7000 troops. The duninge done to the city was heavy and widesproud, churches and other historic buildings, including the three museums, being destroyed. Pop. 106,900, arron. 322,100.

arron. 322,100.

Havre-de-Grace, city in Hartford co., Maryland, U.S.A., on W. bank of Susquehanna R., 35 m. N.E. of Haltimore, Through it passes the Wilmington and Baltimore railroad, which crosses the Susquehanna by a steam-ferry. There are canning factories, flour and lumber mills. Pop. 4000.

Hawaiian Islands, of Hawaii, formerly the Sandwich Islands, form a ter. of the United States. They consist of a chain

of 20 is, in the N. Pacific Ocean between 18° 55′-22° 16′ N. lat. and 154° 4′-160° 30′ W. long., some 9 of which are inhabited. The inhabited is, extend for about 380 m. from E.S.E. to W.N.W., whilst the uninhabited ones continue the chain for meny hundreds of m. W.N.W. All the is, are of volcanic origin, and nearly all of them are surrounded by coral-reef. The names of the inhabited is, are Hawaii, Maui, with two smaller is, Kahoolswo and Lanni, Molokai, Oshu, Kauai, and Niihau. Hawaii Is, is in the shape of an irregular triangle, the sides of which measure 90 m., 75 m., and 65 m. shape of an friegular triangle, the sides of which measure 90 m., 75 m., and 65 m. This is, is the chief of the group, and it possesses the largest volcano in the world, the Mauna Loa (Great Mt.). This not have been the scene of many terrible cruptions, the last of which in 1907, was attended by an earthquake. The mt. has a huge rater, called Mokuaweoweo, and is 13,675 ft. high. The mt. of Kilauca crupted in 1924 and earthquakes have been numerous. A volcanic observators been numerous. A volcanic observatory is situated at Kilauca. Maul lies 26 m distant from Hawaii, and consists of two mts, connected by the isthmus Wailuku about 8 m long and 6 m, wide. The two correll to telegraphs and Lunnicated. apout a in long and o in, wide. The two
small is, Kalicolawe and Lanni afford
pasturage for sheep, and are private
property. The is, of Molakai has a
famous leper settlement called Kalawao,
which a ansula, shut off from the
rest of the is, by a rock wall, 2000 ft. high The is of Oalu is surrounded by a coral reef, and lies 23 m. from Molokai. It is very mountainous, with remarkably beautiful valless and tropical vegetation. There are set craters on the lower mismear the corst. The cap, Honolulu is situated on this is. The Federal Goy, of the 11% A. In fault to the restreet of the U.S A, to facilitate the protection of the Pacific coast and the control of the Panama Canal, constructed extensive naval works at Pearl Harbour, about 7 m. from Honolulu, and also military or m. from tronouna, and mass miners works at Honolulu and other places on the is. The div dock at Pearl Harbour naval station was opened in Aux. 1919 naval station was opened in Auz. 1919 Kaum 1s 63 m from Oahu, and has been called the 'garden isle' on account of its fertile ground. Nilhau completes the chain of inhabited is., and is remarkable for its coral reef in the W. and for the large salt lagoons in the S. For administrative purposes the Ter. of H consists of four cos. The is. of Oahu is known as the city and co. of Honolulu. The remaining cos, are Hawail (including the is of that name). Mant (including the is of

they owe their Christian religion and general education to missionaries (see DAMIEN, FATRER), the first to arrive coming from America in 1820. The pop is very varied, consisting of Europeans, Chinose, Amers., and Jap. The climate is exert to have the control of most salubrious, and the cultivation of the most sambrious, and the cultivation of the sugar-cane forms the chief trade. The la are very fertile and, hesides the sugar-cane, rice, pincapples, bananas, coffee and other tropical and subtropical products are largely grown. Valuable timber is procured from the vast forests. Ser lines of steamers connect the is, with America, Australia, (hina and Japan, and there is an inter is steam navigation comthere is an inter is, steam navigation company. There are telephones and whelestelegraphy, and Honolulu is lighted by electricity. Hawali has a supreme court and circuit courts, and elementary edu-cation is compulsory and free There is cation is compulsory and free There is a normal school and a univ. (founded in 1907). Pop. of the is by the cenus of 1930 was 384,336, an increase of 43 9

History -Captain Cook discovered the H. 1. in 1778 and named the group Sandwich is, after the fourth earl of Sandwich then First Lord of the Admiralty; but in 1779 lost his life in an unimportant encounter at Kealakekua Bay. Later some Brit, and other European sailors settled there, including two men, John Young and Isaac Davis, who became influential advisers to King Kamehameha I., called the Great, founder of the Hawaiian State and monarchy. The Hawaiians looked to Britain as their disinterested protector, as is shown by their flag devised early in as Is shown by their flag devised early in the last century and consisting of narrow bands of red white and blue with the Union Jack in the upper canton. Kamehameha died in 1819 and his successor, Kamehameha II., disturbed over the changes through the growing intrusions of white men, resolved to visit England for advice, and with his queen, Kamamalu, and Polynesian retinue, landed in England in 1824; but the rough pate both store. in 1824; but the royal pair both suc-cumbed to measles in London before their meeting with George IV. who, however, promised their followers that he would watch over their country. The Brit. Gov. then appointed Capt. Richard Charlton of the mercantlle marine to be its first Consular Agent for 'the Sandwich, Friendly, and collety Islands' to reside at Honolulu. Charl'on, after some years there, marked by sev. disputes, was suc-ceeded in 1843 by Gen. Wm. Miller, with maining cos. are Hawail (including the soft hat name) Mani (including the is of that name) Mani (including the is of Kanal), Kahoolawe, Lanai and all Molokan except its leper settlement; and Kanai (including the is, of Kanal), and Nilhau The Molokai leper colony, where Dannen (q.v.) worked between 1873–1889, constitutes a fifth co., Kakawao, which is controlled by the Board of Hospitals and Settlements. The Amer. President appointment made by Charlton. The Settlements. The Amer. President appointment made by Charlton. The points the Governor; there is a Senat of 15 and House of Representatives of 30 members; and the Ter. sends a delegate to Congress, at Washington.

The natives of Hawaii were cannibals in earliest times, but they became more civilized with the influx of other races, and

to establish a paramount influence in the is, as against other Powers; and such remained the state of offairs until the reignmained the state of affairs until the reigning dynasty ended with the death of Kamehameha V. in 1873. Meanwhile, in 1862, an Anglican bishop arrived in H. despite the opposition of the Amer. missionaries, and, in 1865, Emma, widow of Kamehameha IV.. and a grand-daughter of John Young and his untive wife, visited England as the guest of Queen Victoria. But notwithstanding these bonds with England, commercial and agrio, developments in H., combined with the enhanced local position won by with the enhanced local position won by the Amer, missionaries through land ownership and business interests, resulted ownership and blastices the results, removed in the United States acquiring the paramount influence in the is. In 1874 Kalakaya was elected king as the candidate in favour of Amer. annexation against the downger-queen, Emm i, who was supported by the majority of Hawaiians. forced by the majority of Hawahans, circut Britain opposed Amer, anneyation, but James G. Blaine (q.r.), Amer secretary of state, informed the Brit. Gov. in 1881 that sooner or later H. would have to come under Amer, protection, but that the state and the protection but that ome under Amer, protection, but that time did not arrive until the \(> n - Amer. \)
war, when America sought a stronghold and supply depôt in the Pacific. Howhich had been an independent native kingdom till 1893 and a republic from 1891-98, was formally annoxed in 1893 and became a Ter. in 1900. The post of Brit. Consul-General in the Pacific is now held by the Governor of Fin and high commissioner for the W. Pacific. A plebiscite held in the is. in 1940 on the issue whether the Ter. should apply for statehood resulted in a majority of two to one in favour of statehood which, if to one in favour of statehood, which, if accepted, would have made II, the forty-ninth State of the U.S.A. But in Dec. 1941 the Jap, launched their sudden and treacherous attack by plane and submarine on Pearl Harbour and II, thus bemarine on Pearl Larrour and it. the so-came a pawn in the world condict (see Pearl Harboth). By the summer of 1942 the Jap, had completed preparation for an atternat to capture Midway Is, as a stepping stone to an assault on H., but

the decisive Amer air-naval victory off Midway Is. (June 3-6, 1912) averted the danger for the rest of the war.

The pop. of the Ter. of H. is 525,140 (Honolulu Co. and city, 268,900; Hawaii Co. 73,800; Mauil Co. 35,100). In 1940 some 80,000 of the pop. were allow. The land seem in the is to

Queen Victoria, feeling confident that of the Doe. The tn. is large and well-the Brit. Gov. would reject the offer. Paved, and contains a church, nearly Judd was right in his expectation, Adm. destroyed by fire in 1857, but now re-Thomas reporting that Lord Aberdeen. Stored. In the park is the ruined keep of the Brit. Foreign secretary's decision was a thirteenth-century castle, from which a to the ferct that he did not think it fine view is obtained of the Dec. Lord politic or advantageous for Great Britain Gladstone's scat, Hawarden Castle, dates a catablish a newspectation that from 1572. However, the second political contents of the form 1572. However, and well-the contents of the first first form 1572. However, and well-the contents of the first form 1572. However, and well-the contents of the first form 1572. However, and well-the first form 1572 and the first form 1572 and the first form 1572. However, and well-the first form 1572 and the first form 1572 and 1572 Gladstone's scat, Hawarden Castle, dates from 1572. H. has coal-mines, clay-fields, brick works, and potteries, and manufs, tiles, pottery, etc. St. Deiniel's Library and Hostel for theological students was founded at H. in 1895 by Gladstone. Pop. (rural dist.) 31,000; (mrkt. tn.) 8000. Hawes, Stephen (d. c. 1523), Eng. poet probably a native of Suffolk. Educated at Oxford, and afterwards travelled in Europe. Was attached to the court of Henry VII., his knowledge of Eng. poetry and literature procuring him an entry. His prin. work is The Passetyme of Pleasure, or the History of Graunde. Insoure and la Bel Pucel, containing the Knowledge of the Seron Sciences and the Course of Man's Life in this Worlds (1509), an elaborate allegory in forty-six chapters. He also wrote The Concreçum of Succers (1509) and Comfort of Lovers (1512). The Temple of Glass attributed by Warton to H. is ascribed to Lydgate by H. himself. See W. Minto. Characteristics of English Poets, 1874, and J. M. Berdan, Early Tudor Poetry, 1920.

Haweswater, lake in Westmorland, England, 5 m. N. of Keudal, and forming from 1572. H. has coal-mines, clay-fields.

Haweswater, lake in Westmorland, England, 5 m. N. of Kendal, and forming a time entaract on the roud to Penrith. It is very narrow, but deep. The construction of an aqueduct from H. to Manhartman Legisland. chester was begun before the Second World war; it is intended to provide Manchester with 100,000,000 galls, of water a day.

(Coccothraustes Hawfinch species of the Grosbeak genus and Finch family, a good deal larger than the chaffinch. The male bird has brown and black markings on the head, black wing quills, and a white tip of the tail, and the neck crossed at the back by a broad band of ash colour. It is a timid bird and perches on the topmost branches of trees, where if commands a good outlook, and is not easily discovered. The nest is built in lichen-covered trees, of twigs and mosses. Its food consists of the fruit of the pine, hornbeam, plum, cherry, haw-thorn, laurel, holly, etc. It is abundant in S. Europe, and is distributed in the temperate parts of Asia. It is not un-common in some parts of England, but in Scotland is very rare.

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Co. 73,800; Maui Co. 55,900; Kauai Co.
35,100). In 1940 some 80,000 of the pop.
were aliens. The land area in the is, is
6435 sq. m. Prin. cities—Honolulu on
the is. of Oahu, with a pop., in 1947, of
268,900; Hillo (on Hawaii) 29,100, until
the Second World War, was Jap. and will
profishly remain so.

Hawarden, or Harden, mrkt. tn. and
par. of Flintshire, K. Wales, 7 m. W. of
Chester, and 195 m. N.W. of London. It
is connected by a railroad with the banks

checks, tartan, etc. The Common Riding, a traditional festival, is held annually. Stobs, a military camp, is 3 m. to the S.

Pop. 17,200.

Hawk, term applied in a general way to all the durnal birds of prey with the exception of vultures and eagles. Of the the proper, the chief Brit. species are members of the genus Accipiter, the goshawk and sparrowhawk. Hs. are distinguished by their short wings, and not particularly strong beaks. See also FAL-CONRY.



lett sparrowhawk; rigid, goshawk

Hawkbit, genus (botanical name Leon todon) of plants of the order Composita, allied to the dandelion. Three species are found in Britain. It has large vellow flowers and long leaves.

Hawk-Eagle, species of hawk of smallish size, belonging to the genera Spitza tus and Morphuus; natives of warm climates, and often very beautiful in form and colour Some species are provided with well developed crests which extend backwards from the crown of the head. An Indian species is called 'peacock killer' and is species is called peacock knot and be exceedingly destructive to gamebrade of every description; and in Africa there is a species 31 in long. Hs. are often termed 'crested tagles,' the crest being best seen in a species of Morphaus from distance though it a short in a black of the Guiana, though it is absent in a bird of the genus Aisactus in India

genus Assactus in India Hawke, Sir Edward, Baron Hawke of Lowton (1705–81). Eng. adm., b. in Lon-don; entered the navy in 1720, becoming commander in 1733. In 1744 he dis tinguished himself in the action off Toulon, commanding the Berneck, one of the few ships properly handled. In 1747 he be-came a rear-adm. and gained a vatory over the Fr. off Finisterre. For this ser-vice be was knighted and became M.P. for Bristoi the same year. He became an adm. in 1757. His chief fame was gained

The Common Riding, val, is held annually, amp, is 3 m. to the S. Stided in a general way to is of prey with the exest and eagles. Of the hief Brit. species are mus Actipiter, the goswhawk. Hs. are distributed in the species are in Australia (1889–92; 1894–95) and in S. Africa (1895–96).

and in S. Airica (1895-90).

Hawker, Robert Stephen (1803-75), Eng.
poet and antiquary, b. at Stoke Damerel,
near Plymouth, Devonshire, eldest son of
J. S. Hawker, vicar of Stratton, Cornwall,
Educated at Cheltenham Grammar School and Peinbroke College, Oxford. In 1827
he carried off the Newdigate prize, was
ordained in 1831, and became vicar of
Morwenstow on the Cornish coast in 1834.
He laboured here for forty years, during
which period he rebuilt the vicarage, restored the church, and built a school. His
theological views were manust those of the theological views were mainly those of the tractarians. H.'s ballads were direct and simple in style and composed in the true spart of antiquity. None is better known simple in style and composed in the true sprit of antiquity. None is better known than his spirited balled based on the old Cormish refrain, 'And shall Trelawnos die ?' Other of his poetical pieces are Iendrils by Reuben (1821), Records of the 11 extern Shore (1822), Reeds Shaken with the Wind (1843), Quest of the Sangrael (1964), Footprints of Forner Men in Cornwall (1993). See S. Baring Gould, The Vicar of Morvenstov, 1875, C. E. Byles, Life and Letters of Robert Stephen Hawker, 1905; M. F. Burrows, Robert stephen Hawker: A Study of his Thought and Poetry, 1926; and M. Collin's novel, Sucet and Twenty, 1875, in which His character is delimented under the name of Canon Tremaine Canon Tremaine

Hawkers and Pedlars, itinerant dealer-engaged in the business of carrying their goods for sale from place to place. The trade is regulated under special supervision of the legislature, this being made necessary by the opportunities afforded dealers with no fixed domicile of evading responsibility and practising fraud. By the Act of 1871, a pediar is a person who sells articles, travelling without a horse or other teach. beast, and certificates are supplied, to those desirous of carrying on the trade of a pediar in good faith, by the chief officer of the police of the dist, for which they are asked. The Hawkers Act, 1988, defines a hawker as one who travels with a horse, or other beast, bearing or drawing a burden. A single act of selling does not constitute a pedlar, and persons who travel about seeking orders for goods, as agents, sellers

seeking orders for goods, as agents, sellers of fish, fruit, victuals, and exposing goods for sale in a public mrkt., do not come under the category. The feet for a pediar's certificate is 5s., and a hawker's heence can be taken out at a cost of £2.

Hawkes Bay, or Wairos, in New Zealand, N. Is., between Auckland and Wellington, on the E. coast. It is enclosed on the N.E. by Mahia Peninsula, and extends S. to Cape Mata-mawi, a total distance of about 60 m. In 1769 adm. in 1757. His chief fame was gained in 1759 after his attack on Marshal Con- Cook entered it in the Endeavour, and in flan in Quiberon Bay, which resulted in 1848 it was occupied by European-the destruction of the Fr. fleet, and the H. B. receives ev. considerable streams.

Hawkesbury, one of the chief rivs. of New S. Wales, Australia, flowing castward and formed by the union of the Nepean factories of Rivs. The united stream forms the N., W., and E. boundaries of Cumberland co., and, after a course of Edward Clarke, K.C., in The Story of My New S. Wales, Australia, flowing castward and formed by the union of the Nepean and Grove Rivs. The united stream forms the N., W., and E. boundaries of Cumberland co., and, after a course of about 60 m. eastwards, falls into Broken Bay. It is navigable for vessels of 100 tons, but is liable to great and rapid in-undations, produced by the fall of rain on the Bine Mts. Its banks consist of fine alluvial soil. In 1889 railway connection between Adolaide and Brisbane was completed by a bridge over the riv. Total length, 330 m. pleted by a bridge over the riv. length, 330 m.

Hawkesworth, John (c. 1715-73), Eng. miscellaneous writer of humble parentage, hin London. In 1744 he succeeded Dr. Johnson as compiler of the Gentleman's Macazine. In 1752 he started with Johnson and others The Adventurer. H. was son and others ine Aurentum. At the the editor, and of the 140 papers, wrote some seventy-two or so. In 1755 he pub. The Works of Jonathan Swift, with his-The Horks of Jonathan Swift, with his-torical notes and explanations, and pro-pared the account of Capt. ('ook's first voyage, forming part of his own pub., Poyages. He also wrote an eratoric, The Fall of Egypt (1774), sev. essays, and come plays.

'Hawkeye State,' see Iow 1.

Hawkhurst, par. partly in Kent and partly in Sus-ex, England, 12 m. N.W. by W. of Rve, by rall. Pop. 3000.

Hawking, see FALCONRY.

Hawkins, Sir Anthony Hope (1863-1933), Eng. author whose pseudonym was 'Anthony Hope'; second son of Rev. E. C. Hawkins, vicar of St. Bride's, Fleet Street. He began to write early, but it was not until he pub. The Polly Dialones (1894) that he became generally known. The best of his many books, are The Prisoner of Zenda (1894), The King's Virror (1899), Quisanté (1900), and The Prisoner of Zenda (1894), The King's Mirror (1899), Quisanté (1900), and Second String (1910). A master of dialogue, he designed a large portrait-gallery of interesting characters from music hall singers to statesmen. He Prisoner of Zenda added to the language a new adjective. 'Ruritanian,' whose use is to qualify modern gov. and to make it as like gov. In the Dark Ages as possible, for the sale of picturesurers. H. was the sike of picturesqueness. H. was knighted in 1918. His later work includes: A Young Man's Year (1915), Captain Diepne (1918), Beaumaroy Home from the Wars (1919), Lucinda (1920), Little Tager (1925), Memores and Notes (1927), His plays include The Adrentice of Luit Assistance of Park Later 1928. of Lady Ursula and Pilkerton's Pacrage, See Sir C. Mallet, Anthony Hope and His Books, 1935

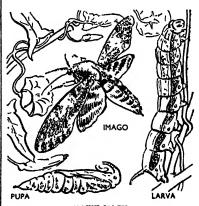
Hawkins, Sir Henry, Baron Brampton (1817-1907), Eng. judge, b. at Hitchm, Hertfordshire, and educated at Bedford School. In 1839 entered at the Middle Temple. Called to the Bar in 1843 and joined the home circuit and Hertfordshire. easions. Took silk in 1538, and for the next eighteen years was one of the most promin-ent leaders of the Bar. He was engaged in many in portant cases; his well-chosen language and lively intelligence succeeded in winning for him the verdicts of juries, In 1876 appointed judge of the High Court

Edward Clarko, K.C., in The Story of My Life (1918), severely criticises his conduct as a indge with some justification. The so-called Reminiscences of II., pub. in 2 vols. in 1904, contain some amusing anecdotes; but the vols. are clearly the work of the editor, Richard Harris, the witty Q.C. who wroto the very entertaining Hinis on Advocacy (ith ed.), 1880.

Hawkins, or Hawkyns, Sir John (1532-95), Eng. seaman and naval commander, b. at Plymouth. While quite a volung man he made sev. voyages, and was the first Englishman to traille in slaves.

the first Englishman to traffic in slaves. the first Englishman to traffic in slaves. In 1573 be was made navy treasurer, and knighted as a reward for his services against the Armada in 1583. In the mustering of the Eng. fleet to defend the country against the Spaniards, H. was capt. of the Victory. While at Plymouth he served under Drake, and was a member of the council of war. In 1594 he served in an expedition, ordered to the W. Indies under the command of Drake, to the Sp. Main, but died at sea off Porto Rico. He left one son. Sir Richard H. also a naval Main, but died at sea of Porto Rico. He left one son, Sir Richard H., also a naval commander. His True Declaration of the troublesome royadge of M. John Hawkins to the parties of Gunna and the West Indies, was pub. in 1,369.

Hawk-moth, species of Lepidoptera belonging to the family Sphingide, sometimes also known as 'sphinx-moth,' the



HAWK-MOTH

name being derived from the resemblance shown in the caterpillar stage to the Egyptian Sphinx. The mother belonging to this family are all large and dull coloured, with a long proboses, a small hinder pair of wings, and long and pointed body. The caterpillars are smooth and stripod, and usually furnished with an erect horn at the hinder end. Allied species are the privet H., the pine H., the deathshead moth, and the hummingbird H.

bird H.

Hawkshaw, Sir John (1811-91), Eng. Engineer, b. at Leeds in the W. Riding of Yorkshire. He constructed various docks, Holyhead Harbour, the Severn tunnel (1887). Charing Cross and Cannon Street reilway stations and bridges, and part of the Underground Railway of London. He was for a time engineer to the Manchester and Leeds Railway; and later on to the Lancashire and Yorkshire Railway. Hawksmoor, Nicholas (1661-1736), Eng. architect, b. at E. Drayton, Nottinghamshire, and at the early age of eighteen obtained employment under Sir Christopher Wren. He became deputy-surveyor of the works at Greenwich Hospital in 1705

the works at Greenwich Hospital in 1705. Through Wren he obtained the post of clerk of the works at Kensington Palace, an office which he held till 1715. He also assisted Wren in the erection of St. Paul's Cathedral from its commencement to its Cathedrai from its commencement to us completion in 1710. Under Sir J. Van-brugh he was also assistant surveyor at Blenheim Palace, Oxfordahire (1710–15) At Oxford II. was employed from an early period, and much of his work is seen there at the different colleges. At the close of Anne's reign he took a large part in the building of fifty new London churches. See H. S. Goodhart-Rendol, Auholas Hauksmore 1921.

Hawkweev, or Hieracium, genus of plants of the natural order Composite They are a perennial species of herb, characterised by yellow, orange, or rid flowers. The orange H., a native of Europe, is frequently cultivated in gardens. by reason of its handsome blooms. The plant is very hairy, having a tuft of oblong leaves at the base. It is quite a pest in the meadows and pastures of New York state, and can only be overcome by cultivation.

Hawkwood, Sir John de (d. 1394), Eng soldier and captain, b. at Sible Heding solder and captain, 0, at side fielding ham in Essex. He won both renown and riches as a condottiere in Italy, where he was known as Grovanni L'Acuto. He distinguished hunself at Crécy and Potters and was knighted by Edward III. From 1363 onward he fought in the It. wars on different sides, and was finally persuaded to fight the battles of Florence for an ann. persion. See J. T. Leader and G. Marcotti's life trans. by Mrs. Leader Scott), 1889.

Hawkyns, Sir John, see Hawkins.
Hawkyns, Sir Richard (c. 1542-1622),
Eng. naval commander, son of Adm Sir
John H. He served under Drake, and
took part in the defeat of the Annada
(Aug. 1588) and in the subsequent descript on the Portuguese coast in 1590. Three on the rortuguese coast in 1590. Three years later he sailed in the Dainty on a voyage round the world. He touched Brazil, passed the Straits of Magellan, and took and plundered Valparai-o, but was defeated and wounded after a hard fight in San Mateo Bay, and imprisoned in Spain till 1602, when he was ransoned and knighted. Later he became vice-saim of

pirates (1620-21). See his Observations on his Voyage into the South Seas, with biography by Sir C. R. Markham, 1878.

Haworth, moorland vil. and par. in the W. Riding of Yorkshire in the Keighley div., 9 m. N.N.W. of Halifax. It has an area of about 10,540 acs. Charlotte Brontë, the novelist (1816-55) and her sisters resided here from their earliest years, and descriptions of the moorland scenery are to be found in their novels, notably Wuthering Heights, by Emily Bronte. The old church of H. has been ruthlessly demolished, but the graves of Charlotte and Emily Bronte are in the churchyard. The parsonage, where they lived, is now the Brontë museum. Pop. 6000. 6000.

Hawthorn (O.E. haga-, hag-, or hege-thorn), genus of shrub or small tree be-louging to the species Crategue, numbering about fifty, bearing fruit resembling in ministure that of the apple, and therefore belonging to the natural order Rosaceæ, with spiny branches and alternate, simple or lobed leaves, smooth and shining. The flowers are sweet-scented, white, with a sometimes reddish tinge, and grow in flat-topped clusters. The H. is a native of the N. temperato regions, especially America, and is represented in the Brit. Isles by the H., whitethorn, or may. It thrives best in dry soils, and may be propagated from

seeds or cuttings.

Hawthorne, Nathaniel (1801-61), novelist, is by common consent the greatest of all Amer. writers of fiction. He was b. at Salem, Mass., July 4, his ancestors being among the first settlers. Educated at Bowdoin College in Maine, he there met and won the friendship of H. W. Longfellow, afterwards to become celebrated as fellow, afterwards to become celebrated as one of the greatest Amer. poets. His best-known works are Twice-Told Tales (two ceries, 1837, 1842), Mosses from an Old Manse (1846), The Scarlet Letter (1850), The House with the Seven Gables (1851), The Bithedale Romance (1852), and The Marble Faum (1866). While his earlier work won the praises of the critics, it secured for the author no recognition from the public which was first attracted to his books. lic, which was first attracted to his books when he pub. The Scarlet Letter, a story of New England in the seventeenth century. The admirable picture of the place and the spirit of the age, the tragic story so well unfolded, was at once acclaimed as the mast rpiece it is still acknowledged to be. It is dark and gloonly, as a tale of human frailty and sorrow must be, and it would be painful to read were it not that the author so clearly shows that there is light beyond. Admirable as are H.'s other books, and especially The House of the Seren Chibles, The Scarlet Letter stands apart, and above, all his works. Must of his fiction deals with the problems of evil and sin and their devastating effect upon human empsignee. In large measure a sort masterpiece it is still acknowledged to be. voyage round the world. He touched Brazil, passed the Straits of Magellan, and brazil, passed the Straits of Magellan, and took and plundered Valparaiso, but was defeated and wounded after a hard fight in Sân Matoo Bay, and imprisoned in Spain till 1602, when he was ransomed and knighted. Later he became vice-adm. of Devon and second-in-command in Sir Robert Mansell's fleet against the Algerine Nathaniel Hawhorne, A Modest Man

1940; L. S. Hall, Hawthorne, Actor of Society, 1944.

Hawtrey, Sir Charles Henry (1858-1923), king. actor-manager and playwright; son of the Rev. John H., an Eton master. H. was first and foremost a racing man, but he achieved success both in England and he achieved success both in England and in the U.S.A. as a first-class comedian, Took leading parts in: The Man from Blankley's; The Private Serretary: The Little Damozel: The Naked Truth: Inconstant George: General John Regan; and Ambrose Applicion's Adventure:
Hawtrey, Edward Craven (1789-1862), headmaster and provost of Eton College, act Unwhen near Eton.

headmaster and provost of Eton College, b. at Burnham, near Eton. Entered the school, with which his family had been connected for nearly 300 years, in 1799. See life by T. Thackeray, 1896.

Hay: (1) Mrkt. tn. and par. in Broconshire, Wales, 20 m. W. of Hereford, on the Wye, and 12 m. S. of New Radnor. Pop. 1300. (2) Post tn. and cathedral city of New South Wales, Waradgery co., in the middle of the Riverina dist., 70 m. N. of Deniliquin. Pop. 3000. (3) A riv. of Alberta, Canada, devcending from the E. side of the Rocky Mts., and flowing into the Great Slavo Lake, 350 m. in length, and navigable for 140 m.

and navigable for 140 m.

Hay, Sir George (A. 1456), Scottish poet and translator. In youth, in France, chamberlain to Charles VII. Returned Returned chamberlain to Charles VII. Returned about 1445. He resided with earl of Cathness and made trans, from Fr. for him. The prose consists of three books dealing with battles, chivalry, and princes' duties; found in MS. in the library of Sir Walter Scott. The poetry also is a translation from the Fr.—20,000 Scottish verses called The Rules of the Scottish verses, called The Buke of the Conqueror Alexander the Great.

Conqueror Alexander the Great.

Hay, James (d. 1636), Brit. diplomat, accompanied James I. to England. Became earl of Carlisle, the first Scotsman to be created an Eng. peer. His previous litles were those of Baron II. and Viscount Doncaster. The king employed him in sev. embassies, notably to France to negotiate a marriage between the Prince of Wales and the Princess Henrietta Maria.

Hay John (1838-1035) Anier, states.

Hay, John (1838-1935), Amer. statesman and author, b. at Salem, Indiana. He was one of the private secretaries to President Lincoln, 1861-65. In 1879-81 he became first assistant secretary of state. In 1897, on the inauguration of President McKinley, H. was appointed ambassador to Great Britain, becoming ambassador to Great Britain, becoming subsequently secretary of state. After the war with Spain of 1898, he directed the peace negotiations. Among his most notable achievements were the Hay-Pauncefote treaty (q.v.) with Great Britain in 1901, and the settlement of the Alaskan boundary dispute between the U.S.A. and Canada in 1903. He pub.: Pike County Ballads (1871), of which the most famous are 'Little Breeches' and 'Jim Bludso'; 'Castlian Days (1871); a vol. of poems (1890); Abraham Lincoln (1890) in conjunction with G. Nicolay, etc. See Addresses of John Hay, 1906; Letters from John Hay and Extracts from Miss Diary, 1908; W. Thayer, The Life and Letters of John Hay, 1915.

Hay and Ensilage. Hay is composed of the stems and leaves of grasses, mown and dried for use as fodder. The object of the farmer in haymaking is to preserve the hay for winter use in a condition most nearly resembling the grass in its natural state, so preserving its nutritive value. To ensure this, the mowing should be done when the plants contain the largest amount of cinter aggregated for the superior of amount of gluten, sugar and other soluble matter; this occurs when the grava is in flower. For the operation of mowing, dry sunny weather is required. After cutting, the gravs is tedded, that is, shaken evenly abroad over the ground, on the first day, and afterwards put into small heaps, or cocks, for the night. On the second and third day the same process is applied and if the weather has remained propitions, the hay should then be ready for stacking. A haymaking or 'ted-ding' machine, drawn by a horse, is adopted for use on a large farm. The following table gives the average constituents of clover hay and meadow hay of average quality; percentage in each

.	Clover	Meadow hav
Dry matter	. 83.0	84 .00
Nitrogen	. 2.40	1 . 50
Mineral ash Phosphoric	. 7.00	6.50
acid .	. 0.57	(1 + 10
Potash .	. 1.50	1-60

The hay crop in Great Britain and Ireland for the new years 1926-30, averaged 13 million tons, and in 1946 it was almost million tons. The production per acre in 1914 was 1.15 tons, in 1928-39 2.1 tons, and in 1946 2.4 tons (see olso GRA94 LANDA).

Ensilage is the name given to the practice of preserving green food for cattle in 'silos' or pits. The practice of 'caching' stores, etc., in such pits is very old, but it was not till comparatively recent years that the idea of using them for the procervation of fodder was carried out. The 'silos' used should be at least 15 ft. deep. and both air-tight and water-tight; an erection above the ground is sometimes used instead of a pit. Crops which are suitable for endlage are grass, clover, vetch, oats, rye, malze, etc. Englage forms a wholsome and nutritious food for cattle, and a very good substitute for root crops. Cows fed on enslage give quite as good milk as when fed on any other variety of fodder, and it is calculated that a larger number of cattle can be supthat a larger number of cattle can be sup-ported on a certain area by the use of en-silage than by the use of green crops. See S. F. Armstrong, British Grasses and their employment in Agriculture, 1937. Hayangs (Ger. Hayingen), tn. of France, in the dept. of Moselle, 16 m. N.N.W. of Metz, on the R. Fensch. There are iron-mines and metallurgical industries. Pop. 10 200

mines and metallurgizal innustries. Pop. 10,300.

Haysseoa, Jorge, see ECHEGARAY Y ELIZABURRE, JOSK.

Hayashi, Tadasu, Count (1850-1913), Jap. statesman, b. at Tokyo; sent to England by the Tokugawa Gov. among the first batch of students. He had much



HAYDN

Haydn, Joseph (1732-1809). Austrian composer, on of a vil. whoelwright at Rohrau, Austria. At the age of twelve he became a chorister at Vienna, receiving at the same time some instruction in the violin and planoforte. After studying under Porpora, he produced with great success, when only twenty years old, his first opera. The Denil on Two Sucks (1752); this was followed by a set of trios and his first important quartet, all of which earned the usual censure of pedantic critics for 'contrapuntal errors,' and 'daring innovations.' In 1758 ho met Prince Antony Esterhazy, and two years later was appointed leader of his excellent orchestra. He remained under the family's patronage for thirty years, during which time he composed a prodigious quantity of orchestral and chamber music, some operas, and also the music to the 'Seven Words on the Cross,' afterwards brought out as an oratoric in 1801. On the death of Prince Nicholas Esterhazy ess, nee Hayes, Catharine (1890–1726), murder-the death of Prince Nicholas Esterhazy ess, nee Hall, b. near Birmingham. She (1790), H. accepted Salomon's invitation

to do with the modern rise of Japan, and igured in the revolutionary movement. He obtained office in 1871, and rapidly rose to the front rank: serving as vice-minister of foreign affairs; and then being appointed to represent his country—first in Poking, then in St. Petersburg, and finally in London. He was created viscount for his services in negotiating the first Anglo-Jap. War he remained in London. He returned to Tokyo in 1906; and was created a count in 1907, for services performed during the Russo-Jap. War. In Vienna, and before long it had travelled was created a count in 1907, for services performed during the Russo-Jap. War. In Vienna, and before long it had travelled round half Europe. Three years later he roduced his last important work, a splendid setting of a version of Thomson's and was author of For His People (1903). did setting or a version of Thomson's Seasons. H. was a composer of amazing fecundity; in addition to the 120 symphonies, he left twenty operas and eighty quartets, and a vast number of concertos, trios, and sonatas, wherein he developed with admirable symmetry the sonata form of Emanuel Bach. He was the first to detach music from religious the first to detach music from religious ceremonial and to give it a purely secular significance as an absolute art, and his music is the expression of a nature at once genial, devotional, warm, and vivacious, See lives and studies by C. F. Pohl, 1875-1882 (completion by H. Botstiber, 1927). J. Cuthbert Hadden, 1902; K. Geiringer, 1948; Rosemary Hughes (Master Musicians), 1950.

Haydock, tn. in Laucashire, England, 31 m. E.N.E. of St. Helens. Has extensive collieries and iron foundries. Pop 10.500.

Haydon, Benjamin Robert (1786-1816). Eng. painter, b. at Plymouth, England, chiefly noted for his historical paint-ings. A man of indomitable high-flaming energy and industry and full of a conviction of his own power, which, however, was not justified. But the most distinguished spirits of the time were among his friends, especially Keats. He suffered a heavy disappointment in the rejection of his historical cartoons for the decoration of the new Houses of Purliament. Among his works are: 'Christ's Entry into Jerusalem' (now at Philadelphia), the fruit of six years' labour; 'The Raising of Lazarus'; and 'The Judgment of Solomon' (in the National Gallery). H.'s lifelong struggle with debt so preyed upon his mind that he became unable to paint, and died by his own hand. Probably his chief title to the regard of posterity was that he was mainly instrumental in get-ting the pre-eminence of the Elgin marbles among the works of the sculptor's marners among the works of the sculptor's art acknowledged in the teeth of hostile cliques, and their acquisition for the nation secured. See S. Colvin, Keats. 1887; G. Paston, R. R. Haydon and his Friends, 1905; and E. George, The Life and Death of Benjamin Robert Haydon. 1948.

Haydon Bridge, eccles. par. in North umberland, 6 m. N.W. of Hexham. It has smelting works, 'Tron and bras-foundries, and coal and lead mines. Pop

age of sixteen, and soon after they left Birmingham they set up a small shop in Tyburn, taking in lodgers. With the help of two of them—Wood and Billings—she murdered her husband in March 1726, and was arrested a few weeks later. At the trial she pleaded 'not guilty,' but was convicted and sontency if a he burnt. was convicted and sontenced to be burnt. Wood and Billing, were hanged. See W. M. Thackersy, Catharine in Fraser's Magazine, 1839-40.

Hayes, Catherine (1825-61), Irish presents, and helled (1825-61).

Magazine, 1839-40.

Hayes, Catherine (1825-61), Irish operatic and ballad soprano, b. at Limerick. She studied at Dublin, and frequently appeared at concerts there In 1842 she went to Paris, where she studied under Manuel Garcia, and on his advice proceeded thence to Italy, where she was engaged at the It. Opera House. In 1849 she came to England and made her début at Covent Garden in Linda di Chamauni.

Chamouni.

Hayes, Isaac Israel (1832-81), Amer. Arctic explorer, In 1860 61 he conducted an Arctic expedition, and eight years later another, fully described in his work. The Land of Desolation (1871). He

work, The Land of Desolution (1871). He also pub. An Arctic Boot Journey (1860), and The Open Polar Sea (1867).

Hayes, Patrick Joseph (1867 1938), Amer. cardinal; b. in New York, son of Daniel H. Graduated Manhattan College, 1883. Priest, 1892. Chancellor of New York, 1903. D.D., Rome, 1904 Pres., Catholic College, 1903-14. Domestic prelate to Pope, 1907. Auxiliary Bishop of New York, 1914. Rector, St. Stephen schurch, Oct. 1915. Catholic chaplain-bishop, U.S.A. Army and Navy, 1917. Archbishop of New York, 1919 Cardinal 1924. 1921.

Hayes, Rutherford Birchard (1822-93), nineteenth President of the U.S.A. He graduated at Kenyon College, Ohio, in 1842, and practised law in Cincinnati from 1819 to 1861. At the outbreak of the Civil war in 1861, he was appointed may of a volunteer regiment, and saw active service in Virginia. He retired as a maj.-gen. In 1865 he was elected as a congressman from Ohio, and was governor of that state in 1867, 1-69 and 1875. In 1876 the Republicans nominated him for President against the Democratic nonness, the re-form governor of New York, Samuel J. Tilden (q.v.). As President H. stood like a rock against the corruptionists, devoted a rock against the corruptionists, devoted his efforts to reforming the civil service system and the resumption of specie payment. He left the White House as he entered it—an honest, hard-working public servant. See W. D. Howells, I ife of R. B. Hayes, 1876; and J. Q. Howard, Life, Public Services, and Select Speeches, 1876.

Hayes, (1) Urban dist. of Middlesex, England, 13 m. W. of London. Munufs. aircraft, grainophones and printing presses. Pop. (with Harlington), 54,700, (2) Vil. of Kent, England, 2 in. S of Bromley, with a large common. Wm. Pitt, the younger was born here and his gramophones and father, the earl of Chatham, ded here. Pop. 5000. Hay-fever, condition of discomfort, which occurs about the time of hay har-

vest. It is characterised by running of the nose and eyes, from irritation of the nose and air passages by grass pollent, chiefly coming from Timothy grass June grass, orchard grass, sweet vernal and meadow foxtail. In severe cases strict or absolute avoidance of the hay crop or other cause is necessary. As, howor other cause is uccessary. As, however, the attack is either induced or aggravated by want of tone in the system, benefit always results from alteration of the mode of life and attention to minute details of hygiene. But prevention is more important than cure. The nose and air passages are benefited by local applications, such as douches of boric acid, alum, common salt, sprays containing ephedime. Good results follow accine treatment when it is begin early. Having regard to the troublesome nature of the condition, it is advisable to have the nose examined for physical defect-which may be amenable to treatment. Hayingen, see HAYANGE.

Hayle, small scaport to. of Cornwall, England, on St. Ives Bay. The harbour has a depth of about 11-20 ft. at high water. Tin mining and smelting are carried on. Pop. 916.

carried on. Pop. 916.

Hayles Abbey, ruins of a Cistercian
Abbey, situated 2 m. N.E. of Winchcomb
and 10 m. N.E. of Cheltenham, Gloucestershire, England, at the foot of the Coiswolds. The abbey was founded in 1216
by Richard, earl of Conwall and king of the Romans, brother to Henry III. In 1270 the mouls were presented with a plual containing the 'Blood of Hayles,' which attracted numerous pligrims until the dissolution of the monasteries. Only a few walls, and notably some of the pointed bays of the cloisters, are now remaining, but the foundations of the great church have been carefully indicated by the planting of yew hedges. There is a museum containing a collection of bosses, early tiles, and other relies of the abbey.

Hayley, William (1715-1820), friend and biographer of the poet Cowper, b, at Chichester; educated at Eton and at Trimty College, Cambridge. Studied law for a short time, but abandoned it for a life of literary case. Ho won fame by his life of literary case. He won fame by his An Essay on History, etc. (1780), An Essay on Painting (1781), An Essay on Epic Porty, etc. (1782) and his poom in six cantos, The Triumph of Temper (1781). His most memorable work is his Life of Couper (1803 01). It also wrote plays, a number of works in prose; lives of Milton (1796) and Romney (1809). His own Venours were pub. in 1823.

Hayman. Francis (1708-76), Eng.

Hayman, Francis (1708-76), Eng. painter, b. at Exeter. Worked as a scene-painter at Drury Lane Theatre. Also became known as a designer by his illustrations to Sir T. Hanner's ed. of Shakespeare, and for Congreve's poems, Smollett's Don Quixole, and the Spectator, 1747. He occupies an important place in Eng. art as one of the founders of the Royal Academy.

Haymarket Square Riot, riot in Haymarket Square, Chicago, 1886, in which seven policemen were killed and sixty

wounded by a bonth when dispersing an anarchist meeting. A number of an-

archists were hanged.

Haymarket Theatre, London theatre standing in the Haymarket, opposite Charles Street, and, next to Drury Lane, the richest in theatrical tradition. During the patent monopoly it was a kind of chapel of ease or training-house to Drure Lane and Covent Garden. It was built in Lane and Covent Garden. It was built in 1720, and leased to a company of Fr. actors, who opened it with La Fille a La Mode. Fleiding's is the first great name connected with the theatre. In 1730 he produced the Tragedy of Tragedies, or Tom Thumb the Great, and became manager in 1731. Ten years later, Charles Macklin opened the Haymarket with a company composed chiefly of his own pupils. In 1747 it was rebuilt and Samuel Fronte assumed the management, and in pupils. In 1747 it was rebuilt and Samuel Foote assumed the management, and in 1766 he obtained a patent for the theatre during his lifetime. Foote sold the Hay-market to Colman the Elder in 1776, who continued to manage it till 1791; and m 1820 Harriss became manager and demoli-bed the old house, the sito of which is now occupied by the Café de l'Europe Ho crected a new theatre a little farther N., which was opened in July 1821 with The Rivals. A larger and uner building, under the same name, was built in 1850. ander the same name, was built in 1850, at which e 'orgo number of plays have been produced. Some of the successful plays in recent years have been The Impossible II oman (1914), General Post (1917). The Freedom of the Seas (1918), Under Sam (1919), The Young Person in Pink (1920), the exquisito fantasy of J. M. Barrie, Mary Lose (1920), the stirring Dover Road (1922), The Man with a Lond of Mischief (1925), and Eden Philipotts' Yellow Sands (1926), The Ivory Dow (1929), by A. Milne; The First Mrs. Fraser (1929), by St. John Ervine, Ten Minute 11th (1934), The Amazing Poetor Clutterhouse (1937), Thesign to Living (1939), Present Laughter and This Happy Bread (1943), Lady Windermarc's Fam (1947), The class Menagene (1948), Many notable performances of Shake Many notable performances of Shake Sussex, England, on the Siregion railway, speare have taken place at the H., and in at the function of Lewes branch, 12 m. N. 1931 Hamlet was produced at this theatre, of Brighton. The largest cattle sale in with an all-star cast including Fay Comp. Sussex is hold here. Pop. 5300. with an all-star east including Fay Compton. Irene Vanbrugh, and Godfrey Ton, Irene Vanbrugh, and Godfres Tearle. In 1918 the theatre was bought by the New Zealand Gov. See W. Mac-Queen Pope, Haymarket. Theatre of Pofection. 1948.

Haynau, see HAINAU.

Haynau, Julius Jakob, Baron von (1786–1853), Austrian gen., b. at Kassel Entered the Austrian army in 1801, and saw much service in the Napoleonic wars, being wounded at Wagram. Between 1816 and 1847 he rose to the rank of field marshal lieutenant. He fought with di-tinction in the It. campaigns of 1818-49 tinction in the It. campaigns of 1848-49 but showed ruthless severity at the capture of lirescia. In 1849 he was called to Vienna, and took supreme military command in Hungary, where, as in Italy, he was accused of brutality. Ou the restoration of peace he was appointed dictator of Hungary, but resigned in 1850. See life by C. von Schönhals, 1875.

Hay-Pauncefote Treaty, treaty negotiated by John Hay (q,v) on the part of the U.S.A., and Lord Pauncefote on behalf of Great Britain, abrogating the Clayton-Bulwer Treaty (q,v), and providing for the construction of a Panama Canal (q,v) under U.S.A. control and for its neutralisation on the same basis as lis neutralisation on the same basis as Sucz Canal. When submitted to the Senate in 1900 it was ratified, but with such amendments, especially regarding its neutralisation, that Great Britain refused to ratify them. A further treaty was negotiated in 1901 and passed by the Senate. It domanded no guarantee of neutrality, although the general principle of neutrality of the Clayton-Hulwer Treaty was retained, and in time of war the U.S.A. were given certain rights of control not definitely specified.

Hay System, see under FOOD AND FEED-

Hayti, sce HAITI.

21

Hayward, Abraham (1801-81), Eng. miscellaneous author, was called to the Bar in 1838, and though he never acquired a considerable practice, he was made Q.O. in 1845. He wrote in the Edunburgh, the Onarlerly, and Fraser's Magazine on many subjects, and his Essays (of which there are three series, collected 1858, 1873, 1871) are distinctly interesting. He wrote against the theory that Sir Philip Exercise was lumber in the start for the series and the series of the Francis was Junius in More about Junius (1863); in 1861 he ed. the autobiography of Mrs. Piozzi. His best-known book is on

of Mrs. Plozzi. His best-known book is on The Art of Dining (1852). His Correspondence was ed. by H. E. Carlisle in 1886. Hayward, Tom (1871-1939), Eng. circkoter; hrst played for Surrey co. in 1893. In 1896 he scored 3518 runs, a world's record which was not besten until 1947 by D. Compton and W. J. Edrich. His highest score, 315 not out, was made against Lancashire in 1898. He scored 104 centuries in first class cricket and over 13,000 runs. He appeared in many test 13,000 runs. He appeared in many test matches against Australia, and coached

J. B. Hobbs.

Hayward's Heath, small tarkt. tn. iu

Hazaken, see HILLEL.

Hazara, the nothernmost dist. of the N.W. Frontier Prov., Pakistan. Its name is probably derived from military colonies of 1000 (hazar) men each, left behind by Jenghiz Khan. Cap. Abbottabad. Pop. 630,000.

Hazaras, race of Mongolian origin occupying the country between Kabul and Herat, and known in the W. provs. as Tainanis. In other dists, they are dis-tinguished by the name of the ter, they

caster,' and the other as the 'setter.'
The former called a 'main,' i.e. any num-The former caned a mail, i.e. any dumber from five to nine inclusive, and then threw. If he threw in or 'nicked, ho won the sum played for from the setter—a 'nick' being 5, 6, 12, 7, 11, 8, and 9; whereas, if he threw out (the acc or deuce-acc) he lost to the setter. The best deuce ace) he lost to the setter. The best main for a caster to call is 7, as it can be main for a caster to call is 7, as it can be thrown in six different ways, out of the thirty-six casts possible with dice. Any other number thrown by the setter was his 'chance,' and if this was thrown first, he won; if the main, he lest.

Hazaribagh, prin. tn. in the dist. of the same name, Chota Nagpur. W. Lengal, India, on the military road from Calcutta to Renares, prefuresquely situated on the

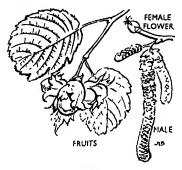
to Benares, picturesquely situated on the high central plateau of H. dist., which contains sev. coalitelds and tea plantations. There are hot springs in the vicinity. was formerly a place of considerable importance. It is on the E. Indian railway.

Pop. 18,000.

Haze (A.-S. hasu, heasu, grey, but origin of word uncertain; some suggest Ger. hassen, to hate, from the disagreeableness of such weather), lack of transparency in the air; viz. obscurity, dim-ness. II. has the appearance of vapour or smoke with little or no dampness, and impedes the vision to a certain extent. It is often due to great heat. H. is really an obscuration of the atmosphere near the surface of the earth, caused by an infinite number of minute particles of vapour in the air. At one time the word was applied to a thick fog or hoar-frost, but is now only used for that thin, must vappearance in the air which makes all objects look indistinct and uncertain. H. is less determinate than mist or fog.

Hazebrouck (Flemish, Marsh Hares), arron., com., canton, and tn. of France, in the dept. of the Nord. on the canal of the same name. It has a trade canal of the same name. It has a trade in gram, butter, scap, etc., and manufallinen, cloth, and gingorbread. Being the central railway junction of Fr. Flanders, H. was held with tenacity by the Brit. forces during the First World War. During the Ger. drive of 1918, Merville, only 5 m. from H., fell to the Ger. on April 11, in the Lys battle, and the next day the lar bear a department to. Ger. began a dangerous movement to-wards H., which on April 12 was as near capture as Amiens had been during the crisis of the Somme battle of the preceding March. So serious was the menace that preparations were made for flooding the approaches to Dunkirk and Calais, and Haig, much against his heart, ordered a withdrawal from the hard-won ridges of Flanders taken the previous autumn. But the Brit. troops rose to the occasion, and on the 13th the remnants of the fumous 29th Div., together with those of the 31st

Corylerc. The common H., of which the fruit is a nut, is distributed throughout Britain and all the temperate parts of Europe, Asia, and N. America. Commonly found in hedges and copplex, reaching a height of about 12 ft. The leaves are alternate, and the male flowers arrows in alliquided authors while the appear in cylindrical catkins, while the female flowers are mere clusters of coloured styles at the extremity of the buds. number of varieties are cultivated ex-tensively in Kent around Maidstone.



HAZEL

Hazel Grove and Bramhall, station in Cheshire, England, 2 m. S.E. by S. of Stockport on the Midland Region railway Pop. 13,300.

Hazelrigg, Sir Arthur, see HASELRIG. Hazing, see under Fagging.

Hazing, see under FAGGING.
Hazieton, city of Pennsylvania, U.S.A.,
34 m. S.S.W. of Scianton in Lukerno co.
It is served by the Pennsylvania and
Lehigh Valley 111ys. The chief manufs,
are shirts, silk and knitted goods, etc. It
is a coal-mining the, surrounded by large

anthracte collicries. Pop. 38,000,
Hazlitt, William (1778-1830), author,
was educated for the Unitarian ministry. but abandoned this profession for painting, in which art he showed some skill. Dis-satisfied, however, with his progress as a painter, he determined to become a writer, and in 1905 pub. his first book, Essays on the Principles of Human Nature. He issued many books during the next years. 'The found Table,' contributed to the Examiner (1815-17), attracted much attention, and the tavourable impression created by these papers was increased by his Characters of Shakespeare's Plays (1817). His lectures (afterwards printed) on the Eng. poets (1818) and the Eng. comic writers (1819) placed him 29th Div., together with those of the 31st in the first rank of contemporary critics, Div., strung out on a wide front, contested every foot of the ground, beating off a series of attacks until the Australians, and his reputation was enhanced with the pub. of The Spirit of the Age (1825), and series of attacks until the Australians, The Plan Speaker (1826). His Life of Nanolcon Ruonaparie (1828–30) was not u very satisfactory biography, but his Content of Lark Four Months, 1919.

Hazel (A.-S. Hæsel; Fr. noisetier, condrier), Brit. tree of the sub-order in the case of writers with whom he was in the first runk of contemporary critics,

acquainted—his judgment was usually that the fundamental structure of the sound, and generally well expressed. He human body is that of a double tube, the wrote with sympathy, but declined, very rightly, to be influenced by the conditions under which a work was produced. He judged on its merits what was before him. See A. R. Waller and A. Glover (ed.), Collected Works, 1902-06; P. P. Howe, Complete Works, 1930-34; and G. Keynes, Bibliography of William Hazlitt, 1931.



WILLIAM HAZLITT

Also W. C. Hazlitt, Memours of William Harlitt: with Portions of his Correspondence, 18C7; A. Bircell, William Hazlit, 1902; P. P. Howe, The Lafe of William Hazlit, 1922, 1928; H. Penson, The Fool of Lore, 1934; and C. M. MacLean, Born under Salurn (novel), 1913.

Hazlitt, William Carew (1831 1913), Eng writer, bibliographer, and numismatist, b. in London, grandson of Wm. H., essayist m London, grandson of Will. 11., essayisted Works include: History of the Origin and Rise of the Republic of Venice (1858), Memoirs of William Hazhtt: with Portions of his Correspondence (1867), R Dodsley, A Select Collection of Old English Plays (1871-76). The Lambs (1897), Collection of William Will. (1871-76). Plays (1871-10). The Lambs (1891), Courtinos and Notes (1876-1903), Shakespeart (1902), Popular Antiquities of Great Britain (1905), The Hazitis: An Account of their origin and Decont, 1911. See Katharine Authony, The Lambs, 1918.

Head. The human body is obviously and lighter of

separable into head, trunk, and limbs, of which the first is naturally divided into skull and face. Vertebrates possessing a bead are termed Craniata, the higher types of which have the hard bony case of the skull containing the brain, which is continuous with the spinal cord, while the dorsal and ventral, and in a comparison of the head with the trunk it will be found that in the former the dorsal tube is large relatively to the ventral. This condition relatively to the ventral. This condition is reversed in the trunk. The head is also remarkable on account of the large number of organs of special senses which it con-tains, such as those of smell (nose), taste tonging, such as those of smell (100s), taste (tonging), sound (ear), sight (toye) (see under those headings), hence there is no necessity to enlarge here on the vital character of this part of the human body.

Development.—In the embryo the distinction between the head and struck here.

tinction between the head and trunk by the formation of a cervical constriction is a change of comparatively late occurrence. though long before this constriction appears the characteristic features of the parts have become apparent. At first the head may be said to consist wholly of the cranial part; the face being developed later from a series of out-growths or bar-

of the cranium.

or the cranium.

Head, Sir Edmund Walker (1805–68), governor-gon. of Canada, b. near Maidstone, Kent. Educated at Winchester and at Oriel College, Oxford. Made Poor Law Commissioner in 1841, and lieutenant-governor of New Brunswick in 1817. In 1851 ho became governor-general of Canada, which position he retained till 1861, when he returned and was made a civil service commissioner and Privy Councillor in the course of a few years. He ed. F. T. Kugler's Handbook of Spanish Painting (1854) and pub. Ballada and other Poems (1868).

Head, Sir Francis Bond (1793-1875), Brit. soldier, traveller, and governor of Upper Canada, b. at Hermitage, Kent. Entered corps of Royal Engineers and served at battles of Waterloo and Fleurus. In 1825 was placed in charge of an associain 1823 was placed in charge of an associa-tion formed to work the gold and silver nines of Rio de la Plata. In connection with this work made sev. rapid journeys over the Andes and across the Pampas, described in his Journeys across the Pampas (1826). Appointed governor of Upper Canada in 1835, but resigned office two years later, and in 1833 was created a largonet. The rest of his life was devoted. haronet. The rest of his life was devoted to literary pursuits. Among his pubs. are: Bubbles from the Brunnen of Nassau (1834), A Faggot of French Sticks (1852), The Royal Engineer (1869).

Headache is present at the commencement of all fevers and many other diseases. When persistent, it may be due to tumour, or other changes in the brain. The term H. is often used to include neuralgia, or pain due to the nerves or nervous structure, as the eye, when it may be relieved by appropriate glasses to correct the otherwise fairly normal vision. H. may also be caused by the fact that the glasses akuli and face. Vericipates possessing a laso be caused by the fact that the glasses head are termed Cranicia, the higher types of which have the hard bony case of the skull containing the brain, which is continuous with the spinal cord, while the coupled by the mouth and pharynx, into the kidney and heart. Ordinary Hs. often appear in the form of megrim or latter of which the upper end of the head is affected, or the pain

is greater in one half than in the other. I masters of thirty-seven of the leading They are frequently accompanied and relieved by vomiting, and the pain is prevented by modifying the diet or adding prevented by modifying the diet of adding evacuation by laxatives or purgatives, or so treating the accompanying aniemia that the digestion is better able to put to a good use the food supplied to it. As the digestion is apt to be upset by worry, quarrels, vitiated air, railway and air journeys, and sea voyages, precautions should be taken when these risks are likely to be incurred. The use of bymostics and to be incurred. The use of hypnotics and drugs is not unassociated with risk, and it is better not to take them, except under medical advice.

Hs. in early life are often a symptom of other diseases which may declare them-selves later. Every effort, therefore, should be made to remove the cause from which they originate. When no organic trouble can be found, chronic or recurring Hs. may be due to an anxiety state arising out of hidden fears and emotional conflicts, which can be resolved by

psychiatric treatment.

Head-hunting, or Head-snapping, custom once prevalent among all Malay races, but now rapidly dying out, of obtaining and treasuring the heads of their enemies. Even to-day it survives among the Dyaks the both to the E. tribes, e.g., among the natives of the Solomon is. Writing of the Solomon islanders in 1893, H. Cayley Webster says, 'These natives are not only head-hunters and cannibals, but make no secret of it whatever... and when apparently on the most friendly terms are only awaiting a favourable opportunity to eatch the stranger unawares, and to add one more head to their already huge collection.' (Through New Guinea and the Cannibal Countries.) It is believed to have had its origin in religious believed to have had its origin in religious motives, the worship of skulls among the Malays being universal, and it is said to have existed in the Philippine Is. in 1577. The chief examples of head-hunters are the Was, a hill tribe on the N.E. trontier of India, and the Nagas and Kuhus of Assam. Severe repressive measures, however, have led to the decrease of the custom. See C. Bock, Headhunters of eustom. Ser Borneo, 1881.

Headington, par. in Oxfordshire, Eng-land, 2 m. E.N.E. of Oxford, in the

Woodstock div.

Woodstock div.

Headlam, Arthur Cayley (1862-1917),
Eng. clergyman, Regius prof. of Divinity,
Oxford. Principal of King's College,
London, 1903 12, and made the theological faculty into the largest theological
college in the Church of England. Bishop
of Gloucester, 1923-45. His pubs. include: History, Authority and Theology
(1909), St. Poul and Christianity (1913),
The Church of England (1924), Economics
and Christianity (1926), The New Prayer
Book (1927), Christian Unity (1930), and
The Holy Catholic Church (1945).

Headless Cross, eccles. par., Warwickishire and Worcestershire, England, 5 m.
S.E. of Brom-spove. Pop. 4600.

S.E. of Brom-grove. Pop. 4600.

Headmasters Conference. In 1869 the
Rev. Edward Thring, headmaster of Uppingham School, invited the head- Health Act, 1919, to exercise in England

schools of England to meet at his house and form a School Society which should have an ann. conference on educational nations. A small body of men attended the first meeting, but the society gradually developed and was incorporated in 1993 there were 140 members in England, five in Scotland, four in Ireland. two from the Channel Is., and one from the Isle of Man, while thirty members were Overseas—seventeen of those were in Australia. All the leadmasters have in Austrain. All the neadmanters have charge of large public schools closely connected with Oxford and Cambridge, to which many of the students pass from these schools. At the Conferences such varied subjects are discussed as the training of teachers, the discontinuance of compulsory Ok. at Oxford and Cambridge, noxious literature, and sports associations.

Headmasters, Incorporated Association of, founded 1890, incorporated 1894. The association has exerted itself to place before the educational authorities and the public at large the issues raised by the organisation of secondary education under central and local authorities. To be qualified for membership it is necessary to be a headmaster of a boys' day-school, such school coming under the category of secondary schools recognised by the Ministry of Education, and controlled by a body of governors who have power to appoint and dismiss the headmaster, and to control the school's finances. Many of these members have seats on the educational committees of co. conneils, and the association has estab, a scheme for the awarding of co. council scholar-hips. The membership is very large, with more than 700 headmasters on the list. The address of the Association, as of that of the Association of Assistant Masters in Secondary Schools, is 29 Gordon Square, London, W.C.1.

Headon Beds, one of the series of Brit. strata occurring in Hampshire, the Isle of Wight, and Devonshire, England, A variable series of clays, marls, sands, and limestones, the upper div. is of fresh water, the middle partly marine, partly fresh water, and the lower of fresh and brackish water origin. II. B., as well as Hamp-stead, Bombridge, and Osborne Beds, belong to the Oligocene system, and strata formed during the epoch between

Rocene and Miocene times.

Head-snapping, see HEAD-HUNTING. Health, see Diet: FOOD AND FEEDING: HEALTH ORGANISATION, WORLD: HF-GIENE: NATIONAL HEALTH SERVICE:

PUBLIC HEALTH; SANTRATION, etc.
Health, Bill of, see Bill Of Health,
Health, Board of, an administrative
body of the Privy Council: estab. early in the last century for the regulation of the sanitary conditions of life, prevention of infectious diseases, epidemics, etc. Its jurisdiction is now exercised by the Ministry of Health (q.e.), Health insurance, National, see Nation-

AL INSURANCE.

Health, Ministry of. This dept. of state was created by the Ministry of

and Wales powers with respect to public attainment of health health and local gov.; and to it were and active co-operation accordingly transferred by the Act: public are of the utn (1) all the powers and duties of the Local Gov. Board, and the Insurance Commisgov. Doard, and the insurance Commission, (2) the powers of the Board of Education relating to the health of expectant and nursing mothers and of children under five, and to the medical inspection and treatment of children and young persons. (2) all the norms of the Inspection and treatment of matter any young persons; (3) all the powers of the Privy Council and of the lord president of the Council under the Midwives Act. Responsibility for the National Health Insurance and the Widows', Orphans' and old Age Contributory Pensions schemes was transferred to the Ministry of National Insurance in 1945. The main National Insurance in 1945. The main administrative divisions in the M. of H. deal with (a) local government organization and finance; (b) housing; (c) general practitioner services and mirsing; (d) hospital services; (e) local authority health services; (f) local authority welfure services; (g) mental health services; and (h) water supplies and sewerage. The analogous Scottish dept. Is the Department of Health for Scotland in Edinburgh. Health, Organization. World, the inter-

ment of Health for Scotland in Edinburgh.
Health, Organisation, World, the International hody charged by the United Nations with responsibility for all the international aspects of health. The constitution for the organisation was signed on Jul 22, 1946 by sixty-one nations (two others agreed at a later date and the U.S.S.R. withdrew), whose governeognised that those problems of health which seems of larger purply national most which are no longer purely national must be solved by international action and on a world-wide basis. In the previous halfcentury a number of international health organisations were built up, none of them organisations were built up, none of them complete but all serving useful purposes. The constitution of the W. H. O. embodies the experience gained by those organisations but goes further in an attempt to help all mankind to a higher standard of living. The principles which the sixty-one nations held as basic to the happiness, harmonious relations and security of all peoples are as follows. Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. The enjoyment of the highest attains.

The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. The health of all peoples is fundamental to the attainment of peace manaments to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States. The achievement of any State in the promotion and protection of health is of value to all. Unequal development in different countries in the promotion of lattice and countries in the promotion of

Informed opinion attainment of heath. Informed opinion and active co-operation on the part of the public are of the utmost importance in the improvement of the health of the people. Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures.' The international quarantine measures. The international quarantine measures to prevent the entry of, e.g., yellow fever, into the United States, of smallpox into Britain, are administered by W. H. O. Another important activity of the organisation is to establish international standards for drugs, sera and vaccines. Another function of the body is to draw up a commun technical language for up a common technical language for doctors in all countries. In order to corry out these talks the W. H. O. are guided by expert committees. At the first meet-ing of the assembly of the W. H. O. the following subjects were regarded as being at the moment the most sulfable for international action: the control of malaria, an extensive programme to cut down the spread of tuberculosis; the control of ceneral diseases; and assistance for governmental services for maternal and child health.

Health, Public, see Public Health.
Health Resorts, places frequented by
the healthy in order to keep healthy, or
by the diseased in order to regain health by the diseased in order to regain health or to check the progress of the disease. For the health, such resorts may be roughly divided into seaside and countryside dists, where the pure air and the generally more active outdoor life suffice to refresh mind and body. H. R. for the diseased are classified according to the conditions they are intended to cure. Consumptives frequent places at a high altitude, such as Davos Platz and Andermatt, or dists, where the climate is mild and the Riviera S. David Platz and Andermatt, or dists, where the climate is mild and equable, as at Bournemouth, Torquay, and the Isle of Wight in England, and the Riviera, S. Italy, Algiers, Egypt, S. Africa, and S. California. Many H. R. depend on the constitution of certain mineral waters, which are commonly regarded as of curative value in specific diseases. Special organisations and physicians of specialised experience probably have more to do with such cures than the actual chemical constitution of the waters. See BALNEOLOGY.

Health Service, National, see NATIONAL

HEALTH SERVICE.
Healy, Timothy Michael (1855-1931), Healy, Timothy Michael (1855-1951), Irish politician, lawyer, and governor-general, b. at Buntry. He was called to the Irish Bar in 1884, became a Q.C., 1899; in 1903 he was called to the Eng. Bar, and was a bencher of Gray's Inn, and of King's Inn, Dublin. A member of und of King's Inn, Dublin. A member of the property in the States. The achievement of any State in the promotion and protection of health in different countries in the promotion and of King's Inn. Dublin. A member of is of value to all. Unequal development in different countries in the promotion of the independent Nationalist party in the health and control of disease, especially communicable disease, is a common danger, Healthy development of the child is of basic importance, the ability to live harmoniously in a changing total onvironment is essential to such development. The extension to all peoples of the benefits of medical, psychological and related knowledge is essential to the fullest Expelled in 1900 from the Nationalist Party for his opposition to the United Irish League, but taken back in 1908, and then again driven out in 1910. Retired from politics in 1918. Became governor-general of the Irish Free State, serving 1922-27. A witty and humorous debater and forensic orator. He is the author of A Word for Ireland (1886), Loyalty plus Murder (1884), Why there is an Irish Land Question (1881), Letters and Leaders of My Day (1928). See L. O'Flaherty, Life of Tim Healy, Memorics and Anecdotes, 1933.

Heanor, urb. dist. in the Ilkeston parl.

Heanor, urb. dist. in the Ilkeston parl. div. of Derbyshire, 10 m. N.W. of Nottingham. It has hosiery works and large collieries. Pop. 22,600.

Heard, (Henry Fitz) Gerald (b. 1889).
Eng. suthor, son of the late Prebendary

Eng. author, son of the late Prebendary H. J. Heard, educated at Sherborne and Cambridge Univ. Literary editor of the Realist, 1929. Provocative writer on the modern world's problems. Bracketed by Sir R. W. Livingstone with G. B. Shaw, H. G. Wells and Aldous Huxley as one of our modern 'Sophists' (Plato: Selected Passages). His Science in the Making (1935) is one of the most fascinating and instructive books of recent years on the instructive books of recent years on the instructive books of recent years on the problems which beset a changing world and the degree of achievement of true progress. His Science Front (1937) is a stimulating survey of the march of science. Other works: The iscent of Humanity (1929), The Social Substance of Religion (1931), The Emergence of Man (1931), This Surprising World (1932), Exploring the Stratosphere (1936), These Hurrying Years—an historical outline of the years 1900–1933 (1931), Pan, Sex, and Time (suggests a remedy for present ills, 1939), The Creed of Christ (1911), The Code of Christ (1943), The Doppelgangers, (1919). (1919).

Hearing, the result of the stimulus of the auditory neurons by impulses set up in the auditory nerves. See EAR.

Hearn, Lafcadio (1850-1904), Eng.

author, was b. in Leucadia, one of the Gk. Ionian Is. His father was an Irishman, Surgeon-Maj. Charles Hearn, stationed in Leucadia at the time of the Eng. army occupation, and he married a Gk. woman. Being a Rom. Catholic, he sent his son to Ushaw College in Durham, but the boy was not happy there. He was tormented by a morbid self-consciousness by reason of his sallow skin, myopic eyes, and general foreignness to his surroundings. He had foreignness to his surroundings. He had also begun to rebel against the religion in which he was brought up. At the age of nineteen he ran away, and in some way, never explained, managed to reach the U.S.A. He secured a post as reporter on the New Orleans Times. U.S.A. He secured a post as reporter on the New Orleans Times Democrat, writing queer poetic pieces about old Creole days and songs. His paper commissioned him to visit the W. Indies, where he spent two years, principally in Martinique. The fruits of this were gathered in his book fruits of this were gathered in his book for conveying the dead to the grave; Two Years in the French West Indies, publishing house of Harper and Brothers commissioned him to go to and sixteenth centuries fis. of great

Japan. After writing a few articles fer their magazine, he soon let his contract drop, and decided to settle in the country. drop, and decided to settle in the country. He felt at ease among the Jap. He became a prof. of Eng. at the univ. of Tokyo, and wrote vol. after vol. about the country of his love. Among them were: Glimpses of Unfamiliar Japan (1894), Out of the East (1895), Kokoro (1896), Gleanings in Buddha Fields (1897), In Ghostly Japan (1899). All of those were distinguished not only by a delicate and unoccidental appreciation of the country, its peoples, its customs and legends. but its peoples, its customs and legends, but were also clothed in a very beautiful silvery prose. Hearn married a Jap. woman, took the name of Yakumo Kolzumi, became a Jap. citizen, and adopted the Buddhist faith. Then began littlestorrent. adopted the Huddhist faith. Then began disillusionment. As a Jap. citizen he was no longer treated with the consideration he had enjoyed before. The last years of his life were marked by Illness, and he lost his position in the univ. of Tokyo. His book, Japan, an Attempt at Interpretation (1904), showed that his eyes were beginning to opened to realities. See Milton. ning to be opened to realities. See Milton Bronner, Letters From the Raven, and Elizabeth Bisland, Life and Letters of Lafradio Hearn, 1906.

Lafardio Hearn, 1906.

Hearne, Samuel (1745-92), Eng. explorer, b. in London. He entered the Hudson Bay Company and examined parts of the coast of the Hudson Bay N. of Fort Churchill (then Fort Prince of Wales) in order to extend its trade area. In 1769 the company sent him on an expedition to discover some valuable copper mines which the Indians reported as existing and to a scretain whether there was a sea upon the N. shores of America which would connect the two oceans. After two attempts in 1769 and early 1770, he set out again in Dec. of that year and accomplished both objects, besides learning the fate of James Knight (q.v.), the explorer from the land of the F-quimaux. See Hearne's Journal, pub. posthumously

in 1795. Hearne, Thomas (1678-1735), Eng. antiquary, b. at Littlefield Green, Berk-shire. He graduated at St. Edmund Hall, Oxford, in 1699, whereupon he was appointed assistant keeper of the Bodleian Library, and in 1712 became second keeper. He was obliged to resign this office in 1716 on his refusal to take the oaths of allegiance to George I., which likewise prevented him from holding other academic positions. His chief works other academic positions. His chief works are: Reliquiæ Bodicianæ (1703), A Collection of Curious Inscourses upon English Antiquities (1720), and cd. J. Leland's Hinerary (1710-12), and Collectanea (1715) Margaret Roper, Life of More (1028), and numerous old chronicles. See his autobiography in the Lives of John Leland, Thomas Hearne, and Anthony & Wood, 1779

or brass, with a canopy and rich hangings, lighted by countless candles. They were erected in the churches over the bodies of

erected in the churches over the bodies of distinguished persons.

Hearst, William Randolph, one of the greatest newspaper owners in the world, was b. in San Francisco, California, U.S.A. in April 1863. Ills father was George Hearst, a California pioneer, who made a fortune in silver mines and served in the United States Senate from his state from 1886 to 1893. The son went to Harvard Univ. from 1882 to 1853 and while there became far more interested in journalism than in academic studies. Went to work on the San Francisco Examiner, and by on the San Francisco Examiner, and by 1887 had gained entire charge of it from his father, the owner. H. experimented with the paper, and reached the turn conviction that the new journalism must include great black sensational headlines, many illustrations and comic cuts. At this time Joseph Pulitzer and his New York World were the prin. exponents of the newer journalism. But H. took from the World staff some of its best people by offering much higher salaries. One of the famous characters in the Hearst comic strips was called the 'Yellow Kid.' Hence the term applied to his new-papers—Yellow Journalism. He vigorously supported Bryan for the presidency in 1896 and 190', and Wilson in 1912 and 1916 As much as anybody, H. pushed the United States into its war with Spain in 1898. On the other hand, he vigorously opposed America entering the First World War, and he also fought America's entering the League of Nations. He was originally a Democrat in politics, serving two terms as Congressman from the 11th New York Dist., 1903—7. He unsuccessfully ran for mayor of New York city on a municipal ownership ticket in 1905, and in 1906 ran for governor of New York state, being supported by the Independence League and by the Democrats. In recent years he has been an independent offering much higher salaries. One of recent years he has been an independent in politics, often supporting Republican candidates. He has built up a vast chain of newspapers.

Heart. In the various animals, this is

the important propulsive structure concerned in the blood circulation. In some invertebrates there is no H., e.g. Acrana such as Amphioxus (see Cephalochoro-LATA), while in others, such as insect-there is an elongated segmented organ, situated dorsally; in the lower orders (e.g. the Earthworm) it is morely represented by a higher development of certain blood vensels. In the vertebrates it is situated y. The comparative anatomy of ventrally. The completed subject, and only the H. is a complicated subject, and only a brief reference can be given here. In fishes it resembles the N-shaped form of the human embryo, and in most cases it is concerned in the propulsion of deoxygenated blood through the gills, where it becomes oxygenated. In amphibia a development of the lungs has resulted in a three-chambered structure, having one ventricle and two auricles. In the rep-tiles a ventricular septum is commencing, and is almost complete in the crocodiles.

magnificence came into use, made of iron | In birds the organ is four-chambered, but or brass, with a canopy and rich hangings. | lacks development to the extent that the incks development to the extent that the chords tendines (see below) are missing from the right auriculo-ventricular valve. In mammals there is, in general, a close correspondence with the human form, though in the lower orders the structure is placed less obliquely. The ossification of some of the fibro-cartilage tissue about the base of the great vessels of the H. is seen in the Ungulates, e.g. the os cordis of

The human H, is a hollow muscular organ, more or less conical in shape, situated in the thorax between the two lungs. It is found to be flattened in lungs. It is found to be flattened in transverse section, and in its natural condition it is roughly equal in size to the closed fist of the individual, i.e. in the adult it appears to be about 5 in. long, 3½ in. in its greatest width, and 2½ in. thick, but it is subject to considerable variations in different persons, and even to variations at different times in the same subject. The ratio of H. weight to body weight is normally about 'to' 't appearing is 22 c.c., approximately, in the new-born infant, from 150 to 160 c.c. the new-born infant, from 150 to 160 c.c. the new-born infant, from 150 to 160 c.c. in a youth of sixteen years of age, and increases rapidly for the next ten years, and more slowly later, reaching about 290 c.c. capacity in a male aged fifty, while in the case of a female the capacity is some 25 c.c. less. The H. is enclosed in a strong membranous sac (the pericardium), and is situated between the breast-bone and the costal cartilages. It breast-bone and the costal cartilages. It has a very oblique position in the chest, the base being directed upwards, backwards, and to the right, and extending from the level of the fifth to that of the cighth dorsal vertebra. The stroke of the H. is most perceptible about 3 infrom the middle line of the sternum, and about 1½ in. below the left nipple. The error contains a longitudinal partition organ contains a longitudinal partition, dividing it into a right and a left half, transverse constrictions further sub-divide its interior into four chambers, viz. the right and left auricles and the right and left ventricles. The exterior is marked by a deep transverse groove, the auriculoventricular furrow, and by two longitudinal furrows, roughly corresponding to the internal septum and constructions. In the furrows will be found the coronary In the furrows will be found the coronary arteries and veins which are concerned with the blood supply of the H.'s component structures. Lymphatic vessels and nerves embedded in fatty tissue and covered by a layer of the pericardium also occur. This pericardium is a dense fibrous mantle of two layers which enclose the pericardial cavity. The outer and inner layers present smooth serves surinner layers present smooth scrous surfaces to one another and secrete a pericardial fluid which acts as a lubricant

Cavities.—The auricles (so named from a fancied resemblance to an ear Lat. auris), which are situated at the broad upper base of the H., are thin walled cavities acting as reservoirs for the blood. The posterior part of the right auricle receives the ven.e cave, the superior being above and the inferior below, and the remains of the Eustachian valve, a relic of footal circula-



F White on joi as

THE HEALT AND CIRCUIATION OF BLOOD IN A FISH (PHF DOGITSH)

t the auricle which reved down nated blood from the body a the ventricl which pumps the blood through the ventral a rta (4) and the afferent branchia arteries (3) t t sills 5) In the gills the blood is receivenit i and circulates round the body acai

tion, will be found attached to the right and lower margin of the orifice of the inferior vent cava. The right auricular appendage overlaps the root of the roots, and has in front of the superior ven reava The thousand valve separates the light auricle from the right ventricle, which pyramidal chamber has much stouter walls than its corresponding auckle pulmonary aftery is in communication with the light ventricle, though a vilve in the form of three with pockets, or cusps, closes the opening into this artery at certain stages of the carduc cycle lach cusp of the vilv has a small know (Corpus Aranti) in the in idle of its curved edge, and the three Il see fit back tube liber hollows (sinuses of value) and the artital tube liber hollows (sinuses of value) and the hollows (sinuses of value) ensure that when the value is fully relaxed, the blood shall have an un interrupted passage into the effection vessel. The left auricle receives the blood shall have a tuber of the statement of the stat vessel The left auricle receives the blood from the pulmonary cent: it passes the noe into the left ventricle, which in this direction is unobstructed by the mitral valve (so called from its resemblance to the bishop's cap of that name). The left ventricle is the stoutest walled of the four chambers, as its contractive force must propel the blood throughout the whole of the body.

Cardiac cycle and the circulation —This cycle of activity comprises (a) the simultaneous contraction of the auricles, followed by (b) a simultaneous contraction of the ventricles The former occupies about one third of the time of the latter, and the two contractions are termed systole of the H I hey are followed by a agatole of the H help are followed by pause, diastole, which occupies a period of time roughly equal to that of the complete systole. The whole cycle is repeated about sevent, five times per min During the contraction of the suricks the mass of blood contained in the large veins prevents blood contained in the large veins prevents regurritation and the total contents pass into the uncontracted ventricles. The valves, which have been slowly closing during the filling of the lower chambers, are completely closed on the commencement of the ventricular systele. The valve sections are seen inner in shape, and are composed of cudothellum, strengthened by enclosed fibrous trisue, the two cusps of the mittal valve are unequal in size. He shely columns (muscular) applicusps of the milinivalve are unequal in size kloshy columns (muscular) papillar(s) support strong tendinous cords (chordec tendino 1), which are attached to under surface of the valve flaps and prevent those from being forced into the interior of the auricle during the ventil cular systole. I from the left ventrice the bright real events the being forced that the bright red oxygenated blood from the pulmonary vein is forced into the aorta pulmonary vein 14 forced into the corra with its three custed valve accombling that of the pulmonary artery it is estimated that a 1 worklele propole forward 3\frac{1}{2} cubic in of blood during each systole, and the tel it work of the H in twenty four hrs 1s equivalent to 120 ft tons. The fatal circulation is different from that described in issuit in selections. from that described, in ismuch as there is direct communication between the two auricles by means of a large opening (formen ovale) in the intrauricular septum, the cycle in this case is right auricle, left surfice, left ventrice to maternal placents, and so on

Smads -H complaints are frequently diagnosed by auscultution or the listening to the H s sounds by means of a suitably applied stethoscope These sounds in a apping attended to the country in a health adult will consist of a length dull cound followed by a short ship sound, and resemble look lub look lub, and so on, the former 14 probably (a seed by the contraction of the muscular ibres of the ventucle and the tension of the auxiculo ventucular valves, the latter is due to the sudden closure of the semilunu valves on the completion of the ventricular systole

H disease may be detected by irregularities in these sounds

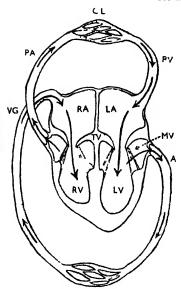
Detailed structure—The main substance of the organ is composed of muscular tissue (myocardum), with a certain amount of interstitial arcelar tissue conamount of interstital arcolar tissue con-taining numerous blood vessels and lymphatics, together with nerves and gangila in certain areas. At the base of the li , beneath the pericardium, there is usually a considerable amount of fat. Fibrous tissue and fibrous cartilage occur at the large orifices at the base of the ventricles. A previous reference has been made to the cessification of this in certain animals. The inner surfaces of the H. cavities are lined by a smooth membrane termed the *endocardium*. The muscles are involuntary, but differ from the usual form of these in being striped. The exact arrangement of the fibres is very compli-cated, and but little understood (reference should be made to recent treatises, as Cunningham's Anatomy), but, in sum-mary, there appear to be common superficial fibres for the two auricles and the two ventricles, and separate deeper fibres for each cavity. Recently, fibre bundles (bundles of His) have been traced connecting auricle to ventricle, the function of which is, presumably, to transmit the impulse of contraction from the auricle to impulse of contraction from the surfice to the ventricle; if these bundles are damaged, the ventricle contracts very slowly, at its own natural rate, and the condition is spoken of as 'heart block' (see Stokes' Adams' disease, below). Nervous system.—The nervous control

of the organ is tripartite, and consists of cardiac nerves derived from the cervical ganglia of the sympathetic system, from ganglia in its own substance, and also gangia in its own substance, and also from the pnoumogastric or vagus direct from the brain; this last system appur ently exercises an arresting power on the H.'s action, whilst the sympathetic nerves have the opposite effect, of speed-

ing up the rate of heat.

Discases.—The H. or its investing membranes may be the seat of man different form. I disease.

Pericarditis is the inflammation of the pericardium, and is usually accompanied by an excessive effusion of fluid into the restaudial seature. pericardial cavity; this may seriously affect the mechanical action of the Il Endocarditis, or the inflammation of the lining membranes of the H.'s cavities, may be caused by acute rheumatism, and may result in serious injury to the valves, usually those of the left side. Valvular damage usually causes murmurs, and these sounds are tested by auscultation, and in this manner a narrowing of the valve orifice (stenosis) can be distinguished from an incompetence of the valves. An acute ulcerative endocardits is due to mero-organisms, and is usually fatal. Myo-carditis, or inflammation of the muscle substance, may take one or more of set. forms, and result in serious permanent trouble, e.g. fatty degeneration. All these complaints, together with derangement of the cardiac nerves or disease of the coronary vossels, result in a demand for extra work on the part of the H. liseli, and this usually results in hypertrophy of the muscle until compensation is estab. This, in its turn, may result in premature senility through mainutrition. Cardiac dilatation and other complaints may be consequents of influence. Palpitation, which may be due to digestive frouble, and is then caused by direct impulses from the stomach, must not be confounded with tachycardia in which the H.'s action is permanently accelerated as during exophthalmic goitre. Bradverse during exophthalmic goitre. Bradvicardiogram, of these impulses is cardia, or the slowing of the rhythm, may be due to cerebral tumour, melancholia, laundios, etc., in the form of Stokes' Adams' Disease, or a senila degenerative a separate place from the body. It



THE HEART AND DOUBLE CIRCUIT OF BLOOD Deoxygenated blood is shown dotted

RA, right auricle, RV, right ventricle; LA left nuricle; LV, left ventricle; TV, tricuspid valve; VG, vrial caval; PA, pulmonary arteries, (L, capillaries in lungs; PV, pulmonary veins, MV, mitral valve, A, aorta; CB, capillaries in body.

change appearing to lead to a weakening of the conductivity of the common deepseated anriculo-ventre ular muscle bundles. Congenital malformations of the H. are not unknown, e.g. the foramen orale, instead of closing up as normally occurs at stead of closing up as normally occurs at birth, may remain open, so that purplish deoxygenated blood leaks from the right side of the H. to the left, whence it is pumped round the body; a sign of this complaint is cyanosis (blueness) of the face, especially on exertion. The usual treatment for many forms of H. disease endeavours to ensure a maximum of rest tor the patient, and a minimum of excitement, both mental and physical; where necessary digitalis and strychnine are administered as cardiac tonics. The conadministered as cardiac tonics. The contraction of the H. muscles (as also of other muscles in the body) is accompanied by electrical impulses which can be amplified and rendered visible on a serven by mean of the electrocardiograph. A photograph (electrocardiogram) of these impulses is valuable for the diagnoses of H. diseases. See also Angina Protoriis.

Heart Burial, the burial of the heart in a satisfact place from the heart in

appears to have been practised by the anct. Egyptians, and was not uncommon in Europe during the twelfth and thirteenth centuries. The custom probably arose out of a veneration for the H., which was regarded as the seat of a man's affections and conscience and was associated with his soul. It was forbidden by Boniface VIII. (1294-1393), but his prohibition was withdrawn by Benedict XI. The heart of Richard I. was buried in Rouen Cathedral, and that of Edward I. at Jerusalem. Other notable instances of H. B. may be cited in the cases of Henry III. in Normandy, James II. in Paris, Robert Bruce at Melrose Abbey. the Fr. kings. Louis IX., XIII., and XIV. Francis I. and II., Philip III., etc., and the Emperor Leopold of Austria. Shelley's heart cor cordium, was sent home to appears to have been practised by the to provide relief for members during sickthe Emperor Leopold of Austria. Shelley's heart cor cordium, was sent home to Bournemouth, and Byron's was huried in the mausoleum at Missolonghi in Greece. The heart of the Marquess of Bute was buried in Jerusalem as late as 1900; that of Thomas Hardy (q.v.) at Stimsford, in 1928. Separate burial was sometimes given to other parts of the body. The viscera of the popes have been buried in the church of the Quirinal since the time of Sixtus V. (1590). See T. J. Pettigrew, Chronicles of the Tombs, 1857; and Emily Hartshorne, Enshrined Hearts of Warriors and Illustrious People, 1861.

Heartburn, the common name for a

Heartburn, the common name for a burning sensation in the chest, often accompanied by a feeling of discomfort in the throat and in the region of the heart. It is due to gastric disturbances, and is generally caused by irritation of the atomach wall by hyper-acidity of the gastric contents. The cardiac symptoms, when present, are generally due to an over-distended stomach interfering with the heart's action. The discomfort it rapidly relieved by a dose of blearbonate of soda. The condition should be treated by ensuring a simple diet, regular exercise, and regular action of the bowels. Charcoal and bismuth are also very useful drugs

for H.

for H. Hearth-money, tax of two shillings imposed in 1662 on every hearth in all houses except cottages. The principle was an old one, for in early Eng. hist an A.-S. king obtained part of his revenue from a funage, a tax on the hearth smoke of all his subjects but the very poor. The tax of Charles II,'s reign was exceedingly unpopular, and was withdrawn in 1689, a window-tax being levied in its stead in The idea is also apparent in the

hearth penny-tax paid annually to Rome as early as the tenth contury.

Heart of Midlothian, old Tolbouth or gaol, pulled down in 1817, of Edinburgh, the cap. of Midlothian, which gives its same to one of Section pouled.

name to one of Scott's novels.

Heart's Content, seaport and tn. of Newfoundland, situated on the Avalon Peninsula, 40 m. N.W. of St. John's, on the E. coast of Trunity Bay. It is the terminus of three Atlantic cables from Valentia is Ireland. Pop. about 1500.

Heart's-ease, see Panny.
Hearts of Oak, large friendly society founded in 1842, the objects of which are

ness, and for members' wives during confinement, to insure the tools and implements of trade of members against loss or damage by fire, and to provide sums at the death of a member and for funeral expenses. The society also defrays the expenses of residence of members in convalescent homes and sanatoria. Special facilities for house purchase are afforded by the society to members and others. The membership is 423,000 and the funds, including reserves, amount to £17,665,000. The society's offices in Euston Road, London, were opened by King Edward VII. in 1907.

Heat, general term applied to that branch of physics that deals with the effects produced by heat on material bodies, with the laws governing the transference of heat from one body to another, with the physical nature of heat, and with the transformations of heat into other forms of energy. The term H is used in ordinary language in a number of different senses, of which the following are the most common: (a) sensation of H.; (b) temp, of degree of hotness; (c) quantity of H.;

(d) radiant II.

(a) The sense of II, is distinct from that of touch, for the former sensation is experienced if we sit in front of a fire, or in the sun, or in the neighbourhood of any the sun, or in the heighbourhood of any hot body, and is, therefore, not dependent on actual contact with matter. It is from this sense of H. that we get our first ideas of H. as a physical entity which is capable of passing from one body to another.

(b) If a hot iron is placed on a cold iron plate, we may observe by a sense of H. that the plate is heated and the iron cooled until they both attain the same degree of warmth. From the sense of H. we derive the idea of a continuous scale or order, which we express as summer H., blood H., red II., etc., and we speak of the temperature of a body as denoting its place in the scale as distinct from the quantity of H. it contains.

(t) The quantity of H. in a body must

(f) The quantity of H. in a body must depend on its size (and also, it should be added, on its material). The temp, on the other hand, does not depend on the size of the body, but on the quantity of H. per unit mass (other things being equal).

(d) It is well known that when the rays of the sun or of a fire full on a body, they warm it, but it must not be supposed that H. has travelled across the intervening space from the sun or the fire to the body warmed. It is known that the energy of radiation is not the same thing as H., though it is converted into H. when the rays strike an absorbing substance.

the rays strike an absorbing substance.

The question at once presents itself,
'What is heat?' In this connection it
will be well to follow briefly the development of the modern theory of H. It has
long been known that H. can be developed
by friction (e.g. between the wheels and
axles of a carriage), or by percussion (e.g.
by hammering a piece of Iron on an anvil),
or by compression (as in the case of a
bicycle pump). This development of H.
was accounted for by supposing that every

body in a normal state possessed a certain capacity for H. and contained a certain quantity of caloric at a definite temp. Percussion altered the condition of the substance and lessened its capacity for H. Some of the caloric was squeezed out of it, Some of the caloric was squeezed out of it, and, being thus set free, manifested its presence by the rise of temp. The weakness of this theory was shown by an experimental investigation carried out by Count Rumford in 1798. He mounted a gun-metal cylinder so that it could be rotated by h.p., while a blunt steel boring tool pressed against its bottom. The cylinder was covered with a layer of fannel to prevent loss of H., and its temp, was recorded by means of a thermometer placed in a hole drilled in the bottom. At the end of half an hour, when the cylinder placed in a hole drilled in the bottom. At the end of haif an hour, when the cylinder had made 960 revolutions, the temp. had risen by 70° F. He found that the metallic dust rubbed off by the friction from the cylinder weighed only 837 grains troy (less than "he of the weight of the cylinder). 'Is it possible,' he said, 'that the very considerable quantity of H. produced in this experiment could have been furnished by so inconsiderable a quantity of metallic dust, and this merely in conof metallic dust, and this merely in con-sequence of a change in its capacity for heat !

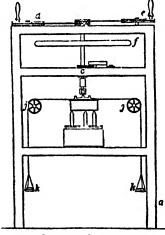


FIG. 1. JOULE'S APPARATUS

But Rumford went further, and showed that the capacity for H. of the dust was the same as that of the solid metal. The H. had clearly been produced by the fuc-tion, and was equivalent to the work done in rotating the cylinder under the con-ditions of the experiment. The accurate investigation of the relation between the work done in driving an apparatus and the H. developed was taken up by Ir. H. is generated. The supposition had Joule of Manchester in the year 1840. The been that the motion in such cases is not H. was produced by friction of a brass

paddle revolving in water contained in a specially constructed brass vessel, so that the water was heated by a kind of revolving churn process and the temp. was registered by a delicate mercurial thermometer. The paddles and the flywheel / (Figs. 1 and 2) were driven by two wheels d and e. If everything were free the friction between the brass vessel and the water would carry the vessel round with the paddles and the water could not be churned, and therefore it would not be heated. The vessel was prevented from rotating by two forces applied by two strings fastened in a groove round the vessel and passing over the pulleys and and weighted at k and k. From the number of revolutions made by the paddles, the work done was calculated.

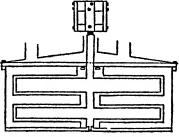


FIG. 2. BRASS VESSEL SHOWING PADDLES

After all corrections were made, Joule After all corrections were made, Joule decided that the work done in ruising a weight of 1 lb. through 772 ft. (at Manchester) will, if spent in friction (between brass and water), raise the temp. of 1 lb of water 1° F. Joule showed quite clearly that the amount of H. produced depended on the amount of work done and on nothing else. He found the same result for friction of water in a brass vessel with a brass paddle, for friction of mercury contained in an iron vessel with an iron paddle, and for friction of two iron rings paddle, and for friction of two iron ring-rubbing against each other in mercury. Joule also proved that H. is absorbed when a gas does work in expansion; and measured directly the amount of H. liborated by the compression of a gas. The principle which these experiments have estab. Is that 'when H. is transformed into any other kind of energy, or rice versa, the quantity of H. which disappears is equivalent to the quantity of the other kind of energy produced, and rice versa.' But we have not given a satisfactory explanation of H. by saying that H. can be transformed into other forms of energy and rice versa. The idea that H. is ultimately due to a

The idea that H. is ultimately due to a motion of some sort has long been entertained. By friction and collision the sensible motion of bodies disappears and H. is generated. The supposition has been that the motion in such cases is not

the bedy as a whole to its individual particles. Thus, when a moving body is brought to rest by friction or collision, the energy of the original visible motion of the body is not annihilated, but passes over into the invisible molecules of the substances taking part in the friction or collision. This theory supposes that when a body is heated the rise in temp, is due to the increased energy of motion of the molecules of the body. But it goes further, and explains the transmission of radiant energy from one body to another, as from the sun to an individual on the earth. There is evidence in favour of the supposition that light is due to ways supposition that light is due to wave motion in the ether, and we have exactly the same evidence in favour of the same supposition with regard to radiant energy. Hadiant energy (for example the radiant energy emitted by hot-water pipes or a blackened stove) and light beliave in exactly the same way in a variety of experiments—in tact the only difference which can be detected is that light, as well as possessing all the characteristic qualities of the radiant energy is also able to as possessing an the characteristic quanties of the radiant energy, is also able to affect the sense of sight. Radiant energy then, like light, is supposed to be due to wave motion in the ether. We say that the molecules of a hot body are in a state the molecules of a hot body are in a state of very rapid vibration, or are the centres of rapid periodic disturbances of some sort, that they thus excite waves in the ether, that these waves travel through the other between a receiving body and the hot body with the velocity of light, and that when they fall upon the receiving hody they are more or less absorbed by hody they are more or less absorbed by the molecules of the receiving body, causing similar motions in these mole-cules. The sense of H. is thus excited in a human being, or an animal, by the waves of radiant energy which start from a hot body just as the sense of eight is excited body just as the sense of sight is excited by the waves of light which start from a luminous body. The fact that light waves possess heating properties if they are absorbed by a suitable substance suggests at once that there is no essential difference between waves of light and waves of radiant energy. Extensive spectroscopic experiments have shown that the two cets of waves differ only in degree and not in of waves unter only in degree and not in kind. The ordinary spectroscope cannot be used, as glass absorbs the waves of radiant energy. Lenses and prisms made of rock salt are used in the instrument, and the radiations are received on the blockward bulber of the received and blackened bulb of a thermometer, or on the blackened part of an electrical instrument for recording temp. In this way the similarity between waves of radiant energy and waves of light has been estab.

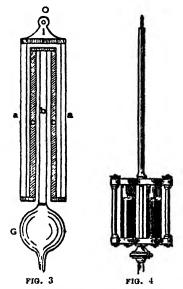
CALORIMETRY.—The scientific unit of H. is the calorie, which is defined as the H. is the calerie, which is defined as the quantity of H. required to raise the temp. of I gm. of water I' C. Other units of H. are the Brit. Thermal Unit, which is defined as the amount of H. required to raise the temp. of I lh. of water I' F., and the Therm, which is equal to 100,000 B.Th.U. In order to measure a quantity of H., the simplest way is to measure the rise of temp. produced in a known mass of materia contained in a witchle wassel or

calorimeter. Calorimetry is fully in text-books on H. These discussed

EFFECTS OF HEAT.—These may be summarised briefly as follows: (1) change of dimensions or of vol.; (2) change of internal stress; (3) change of state; (4) change of temp.; (5) electrical and chemical effects. Each of these will be considered in trees. considered in turn:

considered in turn:

(1) ('hange of dimensions.—Most bodies expand or increase in vol. on being heated. In laying down the rails of a railway, an interval is left between consecutive rails to allow for this. The expansion due to rise of temp. must be taken into account in building steel bridges and in setting up pipes which are to carry hot water. The



COMPENSATING PENDULUM

pendulums of clocks and the balance wheels of watches have to be compen-sated, so that the time of swing shall not be altered by changes of temp. In Fig. 3 a compensated pendulum is shown; the bob G is supported by the rods, a, a, b of one material and the rods, c, c of another material. The lengths of the rods are so adjusted that, whatever the temp., the centre of gravity of the pendulum is always at the same distance below the point of support O.

In Fig. 4 the downward expansion of the rod is compensated by the upward expansion of the mercury. In Fig. 5 the rim of the whoel is made up of three seg-B.Th.U. In order to measure a quantity ments, each of which consists of two of H., the simplest way is to measure the metals securely fastened together, the rise of temp. produced in a known mass more expansible being on the outside. of water contained in a suitable vessel or When the temp. rises, the spoker increase in length, but this is compensated by the bending inwards of each of the segments of the rim. An alloy known as invar, which consists of 64 per cent of steel and 36 per cent of nickel, has an extremely small coefficient of expansion, and it is often used in pendulum clocks, since no compensating device is required when the rod and bob are made of it.

The coefficient of expansion of liquids

The coefficient of expansion of liquids is, as a rule, much greater than that of solids, while the coefficient of expansion of gases at constant pressure is very much greater than that of solids or liquids; greater than that of solids or liquids; further, it is independent of the nature of the gas, i.e. oxygen expands to the same extent as an equal vol. of hydrogen, air, or any other gas for a given rise of temp. under the same conditions of pressure.

(2) Change of internal stress.—Many of these changes in vol. are accompanied by changes in the internal forces or stresses between the molecules of the body. As

between the molecules of the body. As a wheel tyre contracts it is subject to enormous internal stresses. If air or any

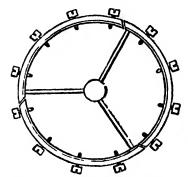


FIG. 5. BALANCE WHEEL OF WATCH

other gas is confined in a closed vessel and its temp. is raised, the pressure exerted by the gas is increased and may burst the vessel. The tyres of a motor-car are often caused to burst in this way in

(3) Change of state.—There are three (3) Change of state.—There are three states of matter, viz. solid, liquid and gaseous states, and, as Black discovered in 1756, the change from one state to another is accompanied by the evolution or absorption of H. Because a thermometer shows no change of temp. while a change of state is taking place, Black referred to this H. as Latent Heat. For example, 30 calories of H. are required to change i gm. of ice into 1 gm. of water at 0°C.

(4) Change of temperature.—If a quantity of water be heated, we can tell by our sense of H. that it is becoming hotter; and in scientific language we say that its temp, is rising. The change of temp, can be measured by means of a thermometer (q.v.).

(5) Chemical and electrical effects, Chem. changes commonly accompany the Chem. changes commonly accompany use heating of a body. Thus when coal is heated in air, it combines with the oxygen of the air and burns; this process, once started, produces sufficient H. for its continuance. The electrical effects of H. once started, produces sufficient H. for its continuance. The electrical effects of H. are of two kinds: (a) That produced when a circuit is made up of wires of different materials, say copper and iron joined together at each end, and the temp. of the two junctions is different; then a small electric current flows round the circuit. This effect is known as the thermo-electric effect (see Electricity). The thermo-electric flows round the circuit. This effect is known as the thermo-electric effect (see Electricity). Thermo-electric tip, and was discovered by Scebeck in 1821. Since a very small electric current can be measured easily, this effect of H. is used in many temp. measuring instruments. (b) The change produced in the electrical resistance of bodies by H. This has been made the basis of a mothod of measuring high temps, by means of the platinum-resistance thermometer (q.r.).

Modes of transference of Heat.—There are three modes of transference of H.:
(i) Convection, (2) Conduction, and (3) Radiation. (1) In convection H. is carried or conveyed by the motion of heated masses of matter. The most familiar instances of this method of transference of H. are the heating of buildings by the circulation of hot water (see Heat-

familiar instances of this method of trans-ference of H. are the heating of buildings by the circulation of hot water (see Hear-ing and Ventillation), or the equalisa-tion of temp. that is produced by the movement of the hot water in a mass of water heated from below (as in the case of a kettle). Convection can only take place in fluids, and the process con-stituting convection takes place as follows. The fluid is heated and expands so that it becomes less dense than the colder sur-The fluid is heated and expands so that it becomes less dense than the colder surrounding fluid. It is therefore pushed upward by the denser fluid, and it takes its H. with it. Convection plays an alimportant part in ventilation.

(2) In conduction, H. is transferred without visible relative motion of the parts of the body. Familiar examples of this are the transference of H. from one end of a poker ularyd in a fire to the other

end of a poker placed in a fire to the other end, and the transference of H. from one end of a silver spoon, placed in hot tea or coffee, to the other and. Conduction always takes place from the hotter to the colder parts of a conductor. All metals are good conductors of heat, while most non-metallic substances, liquids (excluding mercury) and gases are poor conductors of H.

(3) Radiant H. has been shown to consist of light of longer wave-lengths than those that affect our sense of vision. There is no other essential distinction between 'ordinary' light and radiant H. Both travel with the same velocity of 186,000 m. per sec. in vacuu, and we receive all our H. from the sun by means of radiation that travels across empty space incapable of conducting or conveying H. to us by the other modes referred to above.

In must cases H. is transferred by all three methods simultaneously. It is interesting to notice that the thermos (3) Radiant H. has been shown to con-

flack (q.v.) designed by Dewar attempts life, however, man requires some form of to prevent the transference of H. to or H. apparatus in addition to clothes and from the enclosed liquid. It consists of a houses. In devising such apparatus the double-walled vessel of glass (a bad conductor of H.), whose inner faces are considerations of economy and efficiency, space between the walls is evacuated to provide the deviation and atmospheric humidity. prevent transference of H. by conduction or convection.

or convection.

The chief sources of H. are: (1) the sun; (2) chem. action, as in the burning of coal, wood, oto.; (3) mechanical act, e.g. friction; (4) electrical energy, e.g. heaters and lamps; (5) change of state, e.g. from solid to liquid. It is interesting to note that the ultimate source of all H.

to note that the ultimate source of all H. in the above cases is the sun.

Bibliography.—T. Preston, Theory of Heat, 1894; J. K. Roberts, Heat and Thermodynamics, 1928; E. J. Holmyard and F. Barraclough, Heat, Light, and Sound for Beginners, 1931; A. E. Mc-Kenzie, Heat, 1936; and R. G. Nitton, Heat, Light, and Sound, 1936.

Heaters, Electric, see under Electric

LIGHTING.
Heath, William (1737–1814), b. at Roxbury, Massachusetts, U.S.A., started life as a farmer. In 1765 he joined the Ancient and Honourable Artillery Com-Ancient and Honourable Artillery Company, and five years later became its commander. In 1774 he became Brig.-Gen. in the prov. army, and took part in the fighting with the Brit. troops at Concord, Mass., in April 1775. In 1776 he became Maj.-Gen. He was defeated in his attempt to take Fort Independence from the Brit. When Benedict Arnold his attempt to take Fort Independence from the Brit. When Benedict Arnold sought to betray his countrymen and then fled to the Brit. lines, H. took charge of the troops at West Point, New York. When Gen. Washington went S. to fight the troops under Lord Cornwallis, he placed the sturdy H. in charge of the soldiers on the Hudson R., which faced Gen. Clinton. After the Amer. colonies had won their independence, H. retired to his farm. However, he took some part in Massachusetts state politics, being a in Massachusetts state politics, being a State Senator in 1791. He d. at Roxbury, Jan. 24.

Heath, see ERICA.

Heather, see CALLUNA VULGARIS.

Heatherse Callona Voldars, Heathhook, see BlackCook.
Heathfield, George Augustus Eliott, Baron (1717-90), Brit. gen., a younger son of Sir Gilbert Ellott, b. at Stobbs, Roxburghshire. After having been educated at Leyden Univ. and at Woolwich, he fought with the Prussian army in 1735-36, and as a greendier guard in the he fought with the Prussian army in 1735-36, and as a grenadier guard in the war of Austrian Succession at Dettingen and Fontenoy. In 1776, at the outbreak of the Amer. War, he was sent out as governor to Gibraltar. His heroic defence of that fortress against Spain, from June 1779 to Feb. 1783, is one of the finest schievements in Brit. hist. On his return to England in 1787 he was created Baron H. of Gibraltar.

Heating. The temp, of a human being in good health is 98.4° F. When the external temp. rises, that of the body is regulated by perspiration while a low external temp. may be counteracted by increased bodily exercise. In civilised

For detailed arrangements concerning ventilation the article on that subject must be consulted.

In the first place, consideration must be made of the fact that heat is lost from a building by conduction through the walls and especially through windows, and by the leakage of warm air and the consequent entrance of cold air for pur-poses of ventilation. It is the architect's business to make a study of the losses of heat in this way when designing large buildings before computing the necessary

supply of heat.

All systems of H. depend either upon convection or radiation (see HEAT) or upon a combination of both. The most common and obvious method of H. is, of common and obvious method of H. is, of course, by radiation, and is exemplified by the open fire. By this means the walls and furniture and occupants of a room are heated and the air left cool. Heat is radiated not only from the fire itself but from the back of the grate and from the sides. The effective radiating surface of an open fire is increased by making the sides. The effective radiating surface of an open fire is increased by making the sides of a grate inclined at an angle of at least 120° to the back, and the back is made to hang forward over the fire. Further the grate should be bounded on both sides by firebrick and the overhanging part should be made of the same material. The advantages of this method of H and (1) good wantilation has a second and the same of the same o material. The advantages of this discussion of H. arc (1.) good ventilation, because of the draught up the chimney. (ii.) air in the room is left cool, (iii.) psychological effect of the open fire. The latter is a big the cool of H. effect of the open fire. The latter is a big inducement to retain this method of H. in spite of the fact that nearly 80 per cent of the heat from the coal is lost to the

The latter consideration was responsible for the gen. adoption of stoves in colder countries. While the stove is much more efficient than the fire-grate it much more efficient than the fire-grate it is apt to give off noxious times into the room and to produce a 'dry heat' that is unhealthy as it affects the throat and the chest. Bad odours are also prevalent with stoves owing to the burning of the durt in the air as it comes in contact with the hot metal. Gas stoves, which usually consist of asbestos, or some similar substance heated by a row of Russen burners. stance, heated by a row of Bunsen burners (q.r.), are popular where fires are only used occasionally. They act, of course as open fires, but should always be fitted to an efficient flue to carry off the products

the system which allows for the expansion transmission has to be added. If the of the water and by means of which the electrical energy is generated by water placed by the power, however, it is sufficiently economical to make its conveniences attractive. water returns via a vertical pipe to the boiler where it is heated again. Air cocks are placed at the tops of the radiators to that any accumulated air which

impedes circulation may escape.

There is also a single-pipe system of central II. in which the hot water is taken from a single main pipe to each radiator and the return is made to a point farther along the pipe. In this system radiators for removed from the main pipe are supplied with cooler water than those nearer to it and for this reason distant radiators are made larger. The temp. of the water leaving the boiler in most systems is about 180° F. In large buildings the circulation of the water by convection is too sluggish and is further opposed by friction between the water and the pipes. In this event a pump is installed to force the water round the system. Ventilation must be attended to very

ventilistion must be attended to very carefully wherever central H. is adopted, for the radiators heat the air in the room and the heat is thus distributed by convection currents of air as well as by radiation (to a small extent). The air is radiation (to a small extent). The air is not naturally renewed, however, and in large buildings systems of ventilation are often installed. In small rooms the disadvantage cur be remedied by placing the radiators be neath open windows. The hot air rising from the radiator then carries along with it a supply of fresh air as it rushes past the window and construction. as it rushes past the window and conveniently warms up the cold air before it is distributed in the room. The hot-water system is not suitable for tail buildings and a steam-II. system is necessary in such cases. The most widely used (especially in America) system of the latter class is the Vacuum system. Steam is generated in a boiler and passes thence by means of a steam supply pipe to radiators installed in the various rooms. The steam passes in at the top of the radiator via an inlet valve and condensing in the radiator it gives up its latent heat to it. Air and condensed steam pass through a thermostatic trap (designed to prevent the passage of steam) into a return pipe. where it is drawn back to the boiler by means of a so-called vacuum pump. this way rapid circulation is maintained Central H. systems have naturally been developed extensively in America and the steam heating systems there are frequently arranged with one central boiler supplying a whole dist. In Iceland

geyser water is piped to Reykjavik.

Electrical Heating.—The disadvantage of this form of heating is its cost. The ultimate source of the electrical energy 13 ultimate source of the electrical energy is the combustion of coal in steam engines. The efficiency of such engines (i.e. percentage ratio of energy developed to energy supplied) is itself low, and additional loss takes place in the conversion of the mechanical energy of the engine into electrical energy in the dynamo. Still further energy is lost in the cables, in the form of heat, in transmitting the electrical energy and of correction control of the control of the correction of the correcti

At present there are no immediate prospects of such cheap generation of electrical energy being generally adopted in Britain, though the proposed Severn dam would provide a large supply of hydro-electric

power (q.v.).

For H. by hot air, see VENTILATION, since this concerns the heating of air before it is brought into a room. See also under Boilers, Electric Lighting, Furnaces, Fuels, and Gas Water Heat-ers. See H. G. Solomon, Domestic Elec-RRS. See H. G. Solomon, Domestic Elec-tric Healing, 1927; A. A. Jones (ed.) Modern Heating and Ventilation, 1935; E. C. Stanford, Central Heating and Hot Water Supply for Private Houses, 1938; L. J. Overton, Domestic Hot Water Supplies and Central Heating by Hot Water, 1939 and Central Heating, 1949. Heat of Formation. Whenever a chem.

reaction takes place, heat is either evolved (exothermic reaction) or absorbed (endo-thermic reaction) in the process. In the thermic reaction) in the process. In the case of combustion, the quantity of heat evolved is large, in other cases smaller, and in some negative. The H. of F. of a compound is the amount of heat, measured in calories, which is evolved when the molecular weight in grams of the compound is formed from its elements. Thus, when 2 grams of hydrogen combine with 6 grams of oxygen to form 18 grams of when 2 grams of hydrogen combine with 16 grams of oxygen to form 18 grams of water, 69,000 calories are evolved, which amount is said to be the H. of F. of water. The quantity is determined by carrying out the reartion in a calorimeter surrounded by water, the product of the mass of water and its rise if temp. giving the quantity of heat liberated. In cases quantity of heat liberated. In cases where the H. of F. cannot be determined directly use is made of the fact, summed up in the law of Hess, that the quantity of heat evolved or absorbed in the formation of a compound is quite independent of its mode of formation. Thus the H. of F. of carbon monoxide may be arrived at from the following considerations: (1) On forming a gram molecular weight of carbon dioxide from carbon monoxide and oxygen, 67,000 calories are evolved. oxygon, 67,000 calories are evolved.

(2) On forming the same weight of carbon dioxide from its elements, 96,960 calories are evolved. Therefore, on forming one gram molecular weight of carbon monoxide from its elements, 96,960 minus 67,000, or 29,960 calories are evolved. This may be represented as follows:

Certain compounds, such as acetylene A. hydrogen iodide, and nitric oxide are 'endothermic,' i.e. have heat 'stored up' in them, which is liberated on their decomposition into their respective elements.

Heat of neutralization is the heat change taking place when gram equivalents of acids and bases neutralize one another in the form of heat, in transmitting the acids and bases neutralize one another in electrical energy, and of course the cost of very dilute solutions. Heat of solution is

Heat-stroke, see SUNSTROKE.

Heat-stroke.

Heat-stroke.

Heat-stroke.

Heat-stroke.

Heat-stroke.

Heat clouds, and sometimes the superior region clouds, and sometimes the superior region of the stars. In the medieval scholastic philosophy (vide Summa Theologiae of St. Thomas Aquinas) these two are grouped together as the 'firmament,' but it has been suggested that the Jews spoke of them as the first and second Hs., while the abode of God and the Saints, that is to say, H. in the theological sense, was spoken of as the third H. With this is connected St. Paul's reference to the 'third H.' in 2 Cor. xii. 2. Other classifications of the Hs. are found in Jewish and cations of the Hs. are found in Jewish and Lat. theology, the most important being that of the Cabbala, representing the later Rabbinic conceptions. Here we find a sevenfold subdivision of the heavenly regions, of which the highest is the abode regions, or which the highest is the abode of God, the lowest, the region of the stars. This classification has passed into the Mohammedan theology, together with much of the Rabhinic angelology. As the abode of God, H. must be considered as some region of space in which God makes a special manifestation of Himself, and this concention is found running. and this conception is found running through the whole of the Biblical narra-tives and Patristic writings. Lastly, H. is often spoken of as a state, the condition of those souls who share the life of Christ. Thus, in Ephes. ii, 6 and in Phil. ii. 20
this conception, that even now the life and
sonversation of Christians are 'in H.' and
in heavenly places,' is clearly present.
Heaves, or Broken Wind, see under
HORRE (DISEASES).

Heaviside, Oliver (1850-1925). Eng. scientist who carried out much important work on practical electrical research and work on practical electrical research and on the more theoretical aspects of the subject; b. in London. For a few years, ending 1874, he was employed by the Great Northern Telegraph Co. but he retired because of deafness. Afterwards lived in Devonshire, studying electro-magnetic radiation in its application to telegraphy and telephony. He made fundamental discoveries on telephonic fundamental discoveries on telephonic transmission, but is most commonly remembered for his suggestion that an upper layer of the air (the 'Heaviside layer') has conducting powers that serve to confine wireless and other electromagnetic waves to the neighbourhood of the surface of the earth. F.R.S., 1891. Pub. Electro-Magnetic Theory (1893–1922).

- Heavitree, E. suburb of Exeter, Devonshire, England, included in the Exeter

the heat change taking place when the gram molecular weight of a substance is dissolved in a very large quantity of water, usually represented as Aq.

Heaton Norris, tn. of Lancashire, England, situated on the Mersoy, 4 m. S.E. of Manchester, and forming a suburb of Stockport; it is connected with the latter by a bridge and viaduct. It is a busy industrial tn., with cotton and thread mills. The Ashton, Manchester, and Oldham Canal ends here. Pop. 12,000.

Heat-variation, see Barytes.

Heavy water, water in which the heavy isotope of hydrogen with an atomic weight of 2. Formula D₂O. It is considered in ordinary water to the extent of about 1 part in 5000 and may be obtained by the fractional electrolysis of water, D₂O being electrolysed more slowly than regard of a full transport of the extent of about 1 part in 5000 and may be obtained by the fractional electrolysis of water, D.O being electrolysed more slowly than H₁O. In atomic science D₁O is used to slow down fast-moving neutrons.

Hebbel, Christian Friedrich (1813-63). Ger. poet and dramatist, b. in humble circumstances at Wesselburon in Dithmarschen, Schleswig-Holstein. After travelling on the Continent, he settled in Vienna (1846), where he d. His first tragedy, Judith, was performed at Hamburg in 1841, and made his reputation. His tragedies are very powerful, and show a fine sense of dramatic situation; but they depict for the most part the passionate struggles of hot and ugly natures, and his struggles of hot and ugly natures, and his scenes are unrelieved by humour or by lovoliness. His chief works are: Maria Magdalena (1844), Julia (1851), Gyges und sein Ring (1856), and Die Nibelungen (1862). His lyric poems are included in Gedichte (1841-48), and Mutter und Kind (1851). R. M. Werner's critical ed. of his works, 1901-03, and studies by E. A. Georgy, 1904, 1922: P. Bornstein, 1924; and K. Ziegler, 1938.

Hebburn, tn. of Durham, England, situated on the S. bank of the Tyne, in the Jarrow div., 4 m. N.E. of Gateshead. There are chem. and engineering works, coal nitnes, and lead smelting works. Shipbuilding is also carried on. Pop. 24,000.

24,000.

Hebden Bridge, tn. of the W. Riding of Yorkshire, England, on the R. Calder, in the Sowerby pari. div., 8 m. W. by N. of Halifax by rail. The tn. has cotton factories, dye-works, and foundries. Pop. 7000.

Hebdomadal Council, The, governing body of the univ. of Oxford. It was evolved, in 1854, out of the Hebdomadal Board, instituted in 1831 by Charles I., probably at the suggestion of Archishop It consists of the chancellor, vicechancellor, late vice-chancellor, two proctors, er officio, and six heads of houses, six profs, and six members of convocation,

six profis, and six members of convocation, elected by congregation. The council holds its meetings weekly during term.
Hebe, Gk. divinity, goddress of youth, daughter of Zeus and Hera, and cupbearer of the gods before the coming of Canymede. She was the wife of the defied Heracles, with whom she was worshipped at Athens. In Rome she was worshipped as Juventas in a temple on the Capitoline [HI]

as Juventas in a temple on the capitoline Hill. She had the power of restoring the aged to youth. The most famous statue of H. is the masterplece of Canova. Hebel, Johann Peter (1760–1826), Ger. poet, b. at Basie. He studied theology at Erlangen (1778–80), subsequently teaching at the Gymnasium at Karlsruhe. He wrote his neams in 'Alsmanic' dialect: wrote his poems in 'Alemanic' dialect:

his Allemannische Gedichte was trans. by Reinick into High Ger. in 1891. His work was fresh, hunorous, and full of vigour. and attained great popularity. The Schatzkitslein des rheinischem Haustreundes (1811), contains first-rate stories. The first complete ed. of his works was pub. in 1832-34 and further eds. by W. Zentner (1929) and W. Altwegg (1942). See lives by Schullheiss, 1831; C. Längin, 1894; N. Attwegg, 1935; and S. Löffler, 1944. Heber, Reginald (1733-1826), Eng. bishop, b. at Malpas, Cheshire. After graduating at Brasenose College, Oxford, and touring in Europe, entered holy orders (1807), and accepted a living at Hodnet, Shropshire. He was appointed Bampton lecturer, 1815; preacher of Lincoln's Inn., 1822; and bishop of Calcutta, 1823. He is chiefly remembered by the hymns he wrote, the best known being 'From Greenland's Icy Mountains,' 'The Son of the dear the first half of the first millennium B.C. The words town as Greenland's Icy Mountains,' 'The Son of the dear the standard of Gezor, with a summary list of graning operations arranged by the control of the first millennium arranged by the control of the first millennium arranged by the control of the first millennium arranged by the first first for the first millennium arranged by the calculation arranged by the calculation arranged by the calculation arranged by the first millennium arranged by t

and touring in Europe, entered holy orders (1807), and accepted a living at Hodnet, Shropshire. He was appointed Hampton lecturer, 1815; preacher of Liucoln's Inn, 1822; and bishop of Calcutta, 1823. He is chiefly remembered by the hymns he wrote, the best known being 'From Greenland's Icy Mountains,' 'The Son of God goes forth to War,' and 'Hrightest and best of the Sons of the Morning,' Besides his Hymns (new ed. 1878), his pubs. include: A Journey through India (1828), and Palestine: a Poem (1809). See lives by his widow, 1838, and G. Smith. 1895.

Smith, 1895.

Hébert, Jacques René (1757-94), Fr. revolutionist called 'Père Duchesne,' b. at Alencon, and went to Paris as a servant. At the outlignk of the Revolution he became an extreme Jacobin, propagating his views in Le Père Duchesne (which he ed., 1790-91), and in various pamphlets, such as La Lanterne marque (1790). Ho joined the Club of the Cardeliers (1791), became a member of the Commune (1792). He took part in the Sopt, massacres and sat on the commission which judged Marle Antoinette. He inangurated a 'Worship of Reason,' the followers of which were called Hébertists or Euragés, but was arrested by his rival Robespierre, and guillotined on March 21, See studies by C, Brunet, 1857; and Mater, 1888; and F. V. Aulard, Le Culte de la raison, 1892.

F. V. Aulard, Le Culte de la raison, 1892.
Hebrew Language, Writing and Literature. Language, in which almost the whole of the O.T. (see BIBLE) was written, is a branch of the great Semitic family, so called (since 1781) from the name of Shem, the first-born of the three sons of Noah (Gen. x.). The Hebs. or Israelitos and the Aramaeans are considered as belowing to the so-called sons of Notal (1998. X.). The Hobs. or Israelites and the Aramaeans are considered as belonging to the so-called 'Third Semitte immigration,' which during the second millennium E.C. occupied Palestine, Syria and N. Mesopotamia. The Semitte languages lend themsolves to the following div.: (1) The N.W. group, consisting of two main branches, Canaanite (including Heb., Phenician, Moabite) and Aramaic (including Syriae); (2) the E. group (including Accadian, Assyrian and Babylonian); and (3) the S. group (Including Arabic and Ethiopic. All these languages possess certain features in common, obscured, however, to some extent by the particular developments of each. The chief of these Semitte peculiarities are: (1) Stems mainly based on three consonants; therefore (2) the scripts generally consisted of consonants only, the cuneiform writing (q.v.) forming ilarities are: (1) Stems mainly based on three consonants; therefore (2) the least eight centuries, from about 1000 scripts generally consisted of consonants s.c. to the second century s.c., but its only, the cunciform writing (q.v.) forming most flourishing period lasted from the

half of the first millennium B.C. The earliest is a small stone-tablet, known as the Calendar of Gezer, with a summary list of farming operations arranged by months. It can be assigned to c. 1000 B.C. The important Moabite stele of King Mesha', belonging to the middle of the ninth century B.C., is written in a dialect almost identical with Heb. About 80 ostraca, or inscribed potsherds, found at Samaria, belong to the ninth or eighth century B.C. They are invoices of oil and wine, and are written in a beautiful cursive type, and provide us with examples of the dialect and cursive script of the N. Kingdom of Israel. The most important epigraphic monument from Judaea is the siloam inscription, assigned to c. 700 B.C. The Early Heb. cursive writing reaches its peak in the now famous collection of twenty-one letters and other documents from Lachish (in S. Palestine), written in ink in a bold script in perfect Biblical Heb. A considerable number, about a 150, of inscribed stone seals have also been discovered in Palestine, and they attent the of inscribed stone seals have also been dis-covered in Palestine, and they attest the diffusion of writing among the Hebs. in the pre-exilic period (first half of the first mil-iennium B.C.). Stamps impressed on jar-handles, inscribed weights and measures, marks on pottery and masonry, and other miscellaneous documents, all have a certain value from the palacographical as well from the linguistic and historical point of view. All these inscriptions are written in the Early Heb. alphabet, which, together with the Phonician, belongs to the Canawith the Phenician, belongs to the Canaanite branch of alphabets (see Alphabet). Both the writing on Jewish coins from the Maccabean age to Bar Kochba's revolt (140 B.C. to A.D. 132-13.), and the beautful, neat, and symmetrical Samaritan alphabet, still in use for liturgical purposes, are direct derivatives of the Early Heb. script. On the other hand, the modern Heb. alphabet (see Fig. on p. 266 of Vol. I.), in all its monumental, book-hand, and cursive forms, is not a descendant of the Early Heb. alphabet, but of the 'Square-Hebrew' alphabet, which was a derivative of the Aramaic alphabet and can be traced from the second and first centuries B.C.

eighth to the sixth centuries B.C. After the return from the Exile, Heb. was gradually supplanted by Aramaic, but it is erroneous to think, as some scholars do, that it died out. Actually, it continued to be employed in 'national' circles. However, considerable portions of the biblical books of Daniel and Ezra are written in Aramaic. We see even from tending over a period of some six or seven tending over a p can see from the later books of the U.T.—
it is largely intermixed with Aramaic
forms and coloured by Aramaic idioms.
Heb. continued to be the language of
religious literature and poetry, and
scholars made continuous efforts to keep
up its high standard. A new form of
Heb. was developed. It is known as
Mishnaic Heb. It was partly artificial,
containing a certain number of borrowings
from the Aramaic Cit and containing a certain number of borrowings from the Aramaic, Gk., and Lat. languages, and, at a later stage, from Persian and Arabic, and was so called because the chief literary monument of this period (second to third centuries A.D.) is the Mishnah (from Heb. shanah, 'to learn by heart, to repeat'), which is a kind of code, containing nearly four thousand rules. To this code, later on, was added the Gemarah (from gamar, 'to supplement,' to complete 'or also' to learn'), which is a sort of complement of and commentary a sort of complement of and commentary on the Mishnah, and includes the store of Hagadah ('homily'). The Gemarah is written in Aramaic: Mishnah and Gemarah together form the Talmud (i.e. what is 'learnt', or 'taught,' from Heb. lamad, 'to learn'). There are two Talmuds in existence, the Babylonian Talmud (written in Aramaic) and the Jerusalem Talmud (written in Palestinian Aramaic). While both have the same Mishnah, they differ considerably in their Gomarah. The Babylonian one is the more perfect and authoritative, and it is also much more copious (about four times as large) than the Jerusalem Gemarah. The Talmudic literature was intended principally for the learned. It grew from the discussions in the academies and schools; and thus a sort of complement of and commentary learned. It grew from the discussions in the academies and schools; and thus there arose also a system of biblical expositions, and popular lectures and sermons. These discourses were given in the synagogues, and formed the basis of the Midrashic literature, the Midrash, from Heb. darash, 'to expound.' (Quotations from prior Midrashie works, especially those whose contents are Halachic ('legal') are in Heb.) The word Midrash also meant 'doctrine' or 'study,' and was sometimes used synonymously with Talmud or Gemarah. The Talmudic literature is a very valuable body of laws and decisions, a monument of Jewish learning, acumen and wisdom, and it learning, acumen and wisdom, and it has moulded the Jewish people, promoting their intellectual activity, regulating their conduct, influencing their

mathematics, law, medicine, anatomy, etc.—we are bound to come across much etc.—we are bound to come across much that is useless. However, its main idea heing 'to make a fence round the law,' it succeeded in preserving Judalem for many centuries to come. The study of the Talmud spread rapidly through all countries of the diaspora, from Habylonia through N. Africa and Italy to Spain, France and Germany.

Another important branch of Helb. Ilterature is the Pryputim, or 'liturgical poems.' Some of these survived in the Jewish prayer-books, but a great part seems to have been lost for ever. Many fragments of Plyyut literature were discovered in the famous Genizah of Cairo This enormous collection derives its name from the Heb. ganaz, to hide, store up.
The Jews were accustomed to put away
all sorts of material written or printed in
Hob. lest anything on which the name of God might be inscribed should be descrated by profane use. Some of these fragments have already been pub. in I. frugments have already been pub. in I. Davidson's Theorem. of Medician Hebrew Poetry, 1821-29, others have still to be studied, and recently a Research In stitute for Hebrew Poetry has been founded at the Heb. Univ. of Jerusalem. with the task of reconstructing this lost branch of Heb. literature. The authors of those poems belong to different periods and localities. Of some nothing but their and localities. Of some flowing out their names are known. Others are more or less known; the earliest of them seem to have lived in the sixth to eighth centuries a.D., but the majority belong to the ninth to eleventh centuries. Those beautiful poems written mainly in Heb., reflect many of the salidous and cultural life. aspects of the religious and cultural life of Oriental Jewry during the millennium following the destruction of the Temple. some of these poems were composed by the celebrated Gaon Saadya (b. 822). Other important literary work was pro-duced under the Gaonate (see GAON).

The Heb. alphabet, as already men-tioned, was purely consonantal, but the absonce of vowel-letter was not strongly felt, because, it must be emphasised, the Semitic stems are essentially consonantal. Semino steins are essentially consonantal. However, as Heb. speech passed out of daily mae, it became necessary to introduce some form of vocal distinction in order to read and explain the Holy Scriptures correctly. Originally, four of the

consonants (the glottal dleph and Mt, and the semi-vowels waw and yod) were also employed to represent long vowels, but gradually they began to lose their weak to increase the inneteenth century the language of consonantal value, and became a kind of vocal consonants, known as matres lectionis. Not only were they used as long vowels, but (for instance in the centry discovered Heb. MSS. which are partly assigned to the second century recently discovered Heb. MSS. which are larguage of the Jewish religious schools, and was also the lingua france of Jewish recently discovered Heb. MSS. which are destructions occurred at various times in destructions occurred at various places, but Heb. remained up to various places, but Heb. remained up to various places, but Heb. remained the induction of the synagogues, of the Jewish religious schools, and of the Jewish prayers, and of the Jewish religious schools of the synagogues, of the Jewish religious schools of the synagogues, of the Jewish religious schools of the synagogues, of the Jewish religious places, but heb. Also and the surious places, but heb. The destruct recently discovered her. his., which are partly assigned to the second century s.c.) they were used with such abundance and with so many combinations of two letters, such as ited-alieph, waw-dleph, etc. that the change in spelling or addition of letters became forbidden. The omission letters became forbidden. 'The omission or the addition of one letter might mean the destruction of the whole world 'says the Talmud. It became, therefore, necessary to introduce a complementary system (not to be employed in the synagogue rolls) of vocalisation by punctuation marks, called niquid. Three such vocalisation systems are known, the 'Babylonian,' which was superlinear, the 'Palestinian,' also superlinear, and Tiberiadic,' parly superlinear, but mainly sublinear. letters became forbidden. linear.

If Rabbinic Judaism was mainly creative, medieval Judaism was mainly preservative. Medieval Judaism too possessed creative minds, philosophers, codisessed creative minds, philosophers, codi-fiers, teachers, commentators, polenic writers, great poets, but their common starting-point was, generally speaking, the Talmud. In Cairo there was a galaxy of Jewish intellect, while in Spain Jewish culture was to reach a height it had never previously attained. Jehuda Halevi (1080-1140), a Hob. poet of the most fervid dopth of heart, 'poured forth his passionate longing for Palestine in words of matchless sublimity' (E. forth his passionate longing for Palestine in words of matchless sublimity (E. Levine), but the most important contribution to Judaism came from Moses Maimonides (1135–1205), the greatest intellect in Jewry in the Middle Ages. Ho is regarded as a "second Moses," Maimonides wrote in Heb. and Arabic. Also the writtens of the creat negligical Proposes. the writings of the great medieval Franco-Jewish Biblical commentators Solomon ben Isaac of Troyes, known as Rashl, and David Kimchi of Narbonne were of the highest importance. Rashi (1010–1103) wrote a commentary on the entire Talmud. and another on the Bible. Kimchi's commentary was used in a large degree by successive generations of Christian exe-getes, particularly in the preparation of the Eng. 'Authorised Version' of 1611. Other great commentators were Gershom Other great commencators were Germoni date tenth and early eleventh century), Abraham ibn Esra, Moses ibn Esra, Nachmanides, Jacob Tam, the founder of the school of Tossaphists who flourished in France and Germany for over two hundred years, Meier of Rothenburg, and Joseph Cars, who in the sixteenth contury composed the Shulchan Aruch, a collection of former Jewish codes, which remained of former Jewish codes, which remained the standard guide in Jewish life. Despite the various inquisitions and censorships of the Christian Church and

her attempts during the Middle Ages to eradicate Heb. literature altogether, the Heb. language survived. In Paris, in

bave combined to associate the return of the Jews to Palestine with the return to Heb. The ideal is the estab. of the Heb. Heb. The ideal is the estab. of the Heb. nation, speaking the Heb. tongue, on the soil of the anct. Hebs. The cultural renascence involved in the foundation of the Jewish State of Israel in Palestine is necessarily based on Heb., language of the national past of the Jewish people and of their great original contributions and of their great original contributions to civilization. But, also, a common language was a practical necessity for a polygical community of lawish impulgrants. polygiot community of Jewish immigrants into Palestine from all parts of Europe and the Near E., and no language excepting Heb. had any claim to gen. acceptance. While this rebirth of Heb. is the fundawhile this redirth of Heb. is the fundamental achievement of Zionism in the cultural sphere, Heb. had ceased to be exclusively a religious language, even in the wide connotation of the term 'religious' as applied to Judaism, a century before the birth of Zionism as an organised movement. From the latter half of the eighteenth century onwards, a secular Heb. literature had developed amongst the Heb. literature had developed amongst the Jews of E. and central Europe (its bp. being Italy), though it was a purely literary movement and its language not one in which people habitually spoke or thought. It was, in fact, only with the energence of the national idea in the eighties of last century and the estab. of Jewish settlements in Palestine that Heb. began once again to be a spoken language and the possibility created of a Heb. literature firmly rooted in the life of the people. To-day the supremacy of Heb. people. To-day the supremacy of Heb. in the life of the Jews in Palestine is assured. The pioneer work of the early lieb, teachers has borne fruit in a network that the property of the schools as the property of the schools as the property of the schools as the property of the property work of Heb. schools, elementary, secondary, and technical, with some 100,000 pupils, and the educational tructure is crowned by the Heb. Univ. on Mount Scopus in Jerusalem. Heb. as it is spoken and written in Palestine to-day is substantially the language of the Heb. Bible and the other anet, and medieval iliterature of the Jewish people, though naturally much adaptation and development has been necessary to fit it for its new function under the conditions of to-day; but since the early days of Jewish resettlement in Palestine, men of scholarship have sought to keep the development of the language on the right lines (Leon Simon). Heb., indeed, which had been handed down for centuries as the language of prayer and literature, was, however, not a dead tongue before the appearance of the Zionist movement. It June 1242, twenty-four cartloads of Heb. has always been the lingua franca of

Jewish scholars all over the world, the language of correspondence between Jews language of correspondence between Jews living in various countries. During the Dark and Middle Ages the Jewish communities in the Muslim realm cultivated equally Heb. and Arabic. Their great writers from Spain, Gabirol, Halevi, Ibn-Ezra and Maimonides, wrote their poems and their homilies in Heb., their science and philosophy in Arabic. Furthermore, the revival of the study of Heb. by Christians, which was learnt from Jews, was an integral part of the Reformation and Renaissance in W. Christendom. In the dark ages of Jewish hist. which followed that epoch, Hob. was the regular lowed that epoch, Hob. was the regular vehicle of the religious life of the Jewish masses in Poland, though Yiddish, the Ger. Jewish dialect, which they developed as a second tongue, was the language of the home and the one in which their Heb. religious instruction was explained. And when, at the end of the eighteenth century, the Jews in Germany and W. Europe had the opportunity again to enter into the Jewish cultural activity, Heb., the language of literature, not Yiddish, the language of literature, not Yiddish, the language of the Disspors, was the instrument of their Jowish national education. See C. Brockelmann. Grundriss der vergleichenden Grammatik der semitischen sprachen, 1908-13; G. Bergstrassor, Einführung in die semitischen Sprachen, 1928; D. B. Micdonald, Hebrew Literary Genius, 1933; M. Waxman, History of Jewish Literature, 1930-33; H. and N. Chadwick, Grouth of Early Hebrew Literature, 1936; N. Bontwich.

33; H. and N. Chadwick, Growth of Early Hebrew Literature, 1936; N. Bentwich, Judaea Lives Again, 1944; C. A. Simpson, The Early Traditions of Israel, 1948.

Hebrews, see ISRAEL, JEWS.

Hebrews, Epistle to the, known also as the Epistle of Paul the Apostle to the Hebrews, bears in the oldest MSS. no further heading than the words, 'To the Hebrews,' and even this probably formed no part of the original letter, but was deduced from a reading of the contents. It cannot be proved that the evisile hore deduced from a reading of the contents. It cannot be proved that the epi-tile bore the title 'To the Lacdiceans' or 'To the Alexandrians,' as has been suggested; and the best MSS. do not give the remark found in the end of the Eng. trans... 'Written from Italy by Timothy.' All other particulars with regard to the epistle are equally matter for conjecture, for these is no eight of any clear tradition. epistic are equally matter for conjecture, for there is no sign of any clear tradition with reference to authorship, date, or exact destination. It is norally certain, is 2812 sq. nn. Only 200,000 acs. are used however, that the authorship is not Paulino, and this view is supported by the continuous tradition of the city of Rome where the epistic first appears, Skephard of Hermas (second century). But this city furnishes us with no positive tradition. In Africa an anet. tradition, the conjunction of Pauli which appears in Tertullian's De Pudicitia, c. 20, ascribes the authorship to Barnabas, the companion of Paul, while the Alexandrian tradition seems continuously to have ascribed it to the Apostle of the Gentiles himself. Origen held that the epistic was the development by a disciple of some of Paul's oral instructions. It is impossible here to discuss in detail the objections to the Alexandrian for there is no sign of any clear tradition

theory, but they are quite overwhelming. Neither vocabulary nor style is Pauline, and the gen. character of the epistle shows and the gen. character of the epistic shows that the writer was intimately acquainted with the circumstances of the congregation to which he wrote. There is nothing in this argument to indicate that Hebs. predominate in this congregation, and it is now generally held that Hone was probably its destination. The date is before A. D. 9.3 but the cuestion of authorship is Dably its desimation. And as a state of A.D. 95, but the question of authorship is still unsolved. The names of Luke, Priscilla, Apollos, Clement, and Silas have all been suggested. The aim of the writer was to warn and encourage those Christians—the older view has always been that the epistle was addressed to Christ-ians of Jewish extraction—who, awing to the stress of the times, were inclined to fall away from their allegiance to Christ; and, with this object in view, he sets himself to prove the finality and the perfection of the Christian religion, and its superiority to Judaism. See commentaries by A. B. Davidson, 1882; B. Westcott, 1903; W. C. Wickham, 1910; F. D. Narborough, 1930; and T. H. Robinson, 1933.

Hebrews, Gospel according to the, the most interesting of the apocryphal gospels of the first centuries. Origen and St. Jerome quote it occasionally, and the latter also made Uk. and Lat. trans. of it, but these last have perished. All the quotations from it lead one to consider it quotations from it lead one to consider it as an expanded version of the First Gospel, though it is said to be somewhat smaller than the canonical book.

Hebrides, or Western Islands, are situated off the W. coast of Scotland, and are divided into the Outer H. and the Inner H.

The Outer H. comprises Long Is. (Lewiswith-Harris), N. Uist, Benbecula, S. Uist, Barra, the Shiants, St. Kilda, and the Flannan Is. They are composed almost Flannan Is. They are composed almost entirely of gneiss, and are therefore sometimes called Gneiss 1s. The Inner II. are separated from the Outer group by the Minch and Little Minch. They are a scattered group, including Skye, Elgg, Muck, Coll, Tyree, Liamore, Mull, Staffa, Iona, Kerrera, Colonsay, Oronsay, Jura, Islay, and the Slate Is. The two groups contain more than 500 is., of which about 100 are uninhabited. They are included politically among the cost of Ross, Invernoss, Argyll, and Bute, but have their own ness, Argyll, and Bute, but have their own Member of Parliament. The total area

worth nearly £1,000,000 to the H., but | Memories, 1923; A. A MacGregor, Behold the purchase-tax levied at 66‡ per cent | the Hebrides, 1925; I. F. Anderson, To senously damaged it. The is are very popular with tourists and sportsmen There are bus services, but no railways, | Hebrides, New, see New Hebrides.

popular with tourists and sportsmen throe are bus services, but no railways, air services connect the is., and Stoino way with the mainland.

The II (anct. kbridæ) were invaded by Scandinavians in the sixth century. The Celtic inhab accepted the Christian faith under the teaching of St. Columba. In the ninth century they were subdued by tharold Haarfager, king of Norway, and remained subject to the Norwegians till associations with the Patiarch Abraham.



I dentine & Co., Dundec

THE 10 BRIDES BALALIAN AND LOCH LLISALE

1266 The is were then governed by the scottish race of Somerled until John in H. Little is known of its earlier hist. Macdonald of Islay made himself Lord of but David made it the headquarters of the Isles (1316) Ther were subsciently annexed to Scotland Until the end of the thirteenth century the H alor in it David executed the increase of the interest of the first parts, and only of the thirteenth of the Clyde, the Islandshith It was known as recovered by Judas poninsula of klatvre, the Isle of Man, and the Isle of Rathin Kısamul Castle in the Outer H, we the stronghold of the piratical MacNells of Barra, whose exploits are commonorated in the Hobrid in song, 'Kisamul's Gallery' It was in the is of Skye that Prince Charlie took ic fu-

Ishbosheth It was later served by the Edomites, but was recovered by Judas Maccabaus 1 mally it fell before Ves pasian In the OT II is known also by the name kirith Arba, in the N.T as H only, as (he bion under the later Rom. H only, as (he bion under the later Rom. Empire, and as sunt Abraham in the time of the (rusades. Its present day feature, are high stone houses, narrow streets and visited bazaars at which are said the problem of the control of the co is of Skye that Pince Chaille took it funder in 1 fit. It defeat at culleden in 1 fit. Total pop 60 000 See also Lewis at the features are him to steets and vulted bazaars at which are Lewis-with Harris Ree it W Scott, sold sheepskin coats and blown glass. The most famous nonument of the cit. Tour to the Hebrides with Samuel Johnson, 1898; M Martin, A Bestration of the Western Isles of Scotland, 1703. I Western Isles of Scotland, 1703. I Western Isles of Scotland, 1703. I Western Levis of Scotland, 17

The mosque itself, as distinct from the area, was adapted by the Arabs from a Crusaders' church; in it or within the precincts are the cenotaphs of Abraham and Sarah, which occupy two cotagonal chapels, of Jacob and Leah, N. of the area of the Haram, of Joseph, which is in a separate enclosure, and of Isaac and Rebecca inside the church. Excavations carried out in 1926-23 at H. by Dr. A. E. Mader for the Görresgesellschaft estab. the identity of the site of the famous mrkt. The church are coal mines, iron and chem. works, etc. Hagla. see Hekla. of Hadrian; and at the same time were disclosed remains of the Herodian build-ings and the basilicas of Constantine and ings and the ossiness of Constantine and Modestus. The city, which was much improved during the mandatory regime, has a municipal council and a pop. of about 24,000. In Aug. 1929 it was the scene of the worst of the Jewish massacres by Arabs during the outrages of that month over the Wailing Wall (q.v., and see also l'ALESTINE).

Hebrus, see MARITZA. Hebrus, see Maritza.

Hecatesus of Miletus (c. 550-476 B.C.),
Gk, historian and traveller, who vainly
tried to dissuade his countrymen, the
tonians, from revolting against Persian
rule, and, after their defeat, was one of
the ambassadors to the Persian satrap,
Artaphernes. The only certain work of H. is the Genealogies, or Investigations (an account of Gk. traditions and my thology); Travels round the Earth is sometimes attributed to him. See fragments in K.O. Muller's Fragmenta historicorum Gracorum i. 1891.

Hecate, Gk. goddess, daughter of the Titan Perses and Asterie, retaining her mighty power under Zeus. She ruled in Heaven, Earth, and the Netherworld, being frequently identified with Selene (moon). Artemis, and Persephone, and sometimes represented with three bodies. As patroness of magic, she was mother of Circe and Medea. She also presided over birth and death. She was worshipped in the wilder parts of Greece, especially at cross-roads, where black victims were sacrificed to her.

Hecht, Ben (b. 1894), Amer. writer, b. at Heoht, Ben (b. 1894), Amer. writer, b. at New York City. Joined the staff of the Chicago Daily News, 1914, serving till 1923. Founder and publisher of the Chicago Literary Times (1923-25). Wrote Erik Dorn (1921), Gargoyles (1922), The Florentine Dagger (1923), 1001 Afternoons in Chicago (1923), The Egoist (1923), Humpty Dumpty (1924), A Book of Miracles (1939). In collaboration with Charles MacArthur (Amer nlawwight h. Charles MacArthur (Amer. playwright, b. 1895) wrote the plays The Front Page (1928), Twentieth Century (1933), and the motion pictures Crime without Passion and The Scoundrel. Charles MacArthur, after working on the staff of Hearst's Inter-

Pop. 10,000.

Hecla, see Hekla.

Hectic Fever. This term literally
means habitual fever, and was formerly applied to the regular and recurrent fever of pulmonary tuberculosis, that is, con-sumption. H. F. may be looked upon as an obsolete term in medicine, as it only indicates a condition of weakness.

Hector, Trojan warrior, the son of King Priam and Hecuba, and the husband of Andromache, by whom he had Astyanax.
During the Trojan war he slew Patroclus,
the friend of Achilles. The latter, roused
to anger, drove back the Trojans, but H.
stood his ground, and, in spite of the tears and entreaties of his parents, awaited the approach of the enemy by the Scean gates. At the sight of Achilles he turned in flight and was pursuod three times round the walls of Troy. At last Achilles pierced him with his spear, and, fastening the body nim with his spear, and, hastening the body to his chariot, dragged it through the dust of the city. At the bidding of Zeus, he gave up the body to Priam, who gave it an impressive burial in the citadol. See Homer's Iliad, vi. and xxii., and Virgil's Aineid, 1.

Hecuba, wife of Priam, king of Troy, to whom she bore Hector, Paris, Cassandra, and many others. On the fall of Troy she fell into the hands of Ulysses, and was carried away to Greece as a slave. Thracian Chersonesus her daughter Polyxena was sacrificed by the Gks., whereupon H. revenged the deaths of her many children by killing Polymestor, king of Thrace, who had murdered her son Polydorus. She was pursued, but was changed into a dog and leapt into the sea.

Hedge, fence formed of bushes or small trees growing close together or a line of bushes or evergioens, whether intended as a fence or not. For garden Hs. the oval-leaved type of privet H. is one of the best. It grows quickly and can be clipped with impunity and, in ordinary, good soil it can be planted in close formation. A double row, with plants about 15 in. apart in each semi-row, will become reasonably compact when planted. After a year the plants should be pruned back to half their height to induce a bushy (1928), Twentieth Century (1933), and the motion pictures Crime without Passion and The Scoundret. Charles MacArthur, after working on the staff of Hearst's International Magazine (1924) turned to writing plays and motion pictures and became a partner in the Hecht-MacArthur corporation. He collaborated with Hen Hecht boundary. Holly is also a good hedging in adapting Wuthering Heights for motion presentation, and also collaborated with sidney Howard in Salvation (1927).

Hecker, Isaac Thomas (1819-88), Amer. Rom. Catholic divine, and founder of the

in all soils, those that are sandy or chalky being most quitable. In heavier soils a pening most statistic. In neavier soils agood substitute is the common hornbeam and grows more quickly than beech. Laurel and yew were formerly favourites but only the yew has kept in favour and the deep wall-like neatness of an estab. yew H. is an advantage, though the expensive terror to the common the common that pense is somewhat heavy and available trees are few. Honeysuckle of the Lonicera nitida type have been popular H. plants in recent years. They grow rapidly and are not expensive, but they soon get out of hand unless clipped back sev. times during a season. A honeysuchle H too. during a season. A honeysuckle H. too has the disadvantage of being easily-blown about in rough winds. The abovementioned types by no means exhaust possibilities for Hs. for there are also comfors of various sorts, box and rosemary, escallonias, and Euonymus, coton-

casters and evergreen oaks.

Hedgebote, old term denoting the right

Hedgebote, old term denoting the right of a tenant to cut wood for purposes of repairing hedges, etc., on the land he holds. Hedgehog, name given to sev. species of insectivora, belonging to the family Erinaceido; they are distinguished from their allies by their spines. Erinaceus europæus, the common European H., is generally about 9 in. long, and 4 or 5 in. high: the suit proceds a nextinguished the suit of the suit of the second of the suit of high; the star revel a maximum length of 1 in., are sha ply pointed and grooved along the sides, and controlled by the muscles of the back. The animal can muscies of the back. The animal can roll itself into a ball, britiling with spines, and, thus protected, will sometimes fall from a considerable height. The H. eat-insects, slugs, mice, frogs, young birds, etc., and has been known to attack vipers; it is sometimes domesticated as a protection against vernin. Hibernation with the II. is a matter of temp. Hs. kept in a warm place will continue active througha warm paice will continue active through-out the winter and, with plenty to eat and drink, will take no harm. Even if it sinks into a true torpor the rise of the temp. will rouse the H. again. Young Hs. may arrive at any time from early spring to late autumn, but ordinarily spring litters predominate. The young are been complete with spines, but they are hind and helpless. They grow rapidly, their prickles darken and harden, and thoir eyes open. Hs. may do some damage, and cases are known of coops invaded and chickens killed, but they are invaded and chickens killed, but they are not typical.

not typical.

Hedgeley Moor, tract of moorland in Northumberland, England, situated in the Berwick div., and in the taship. of Beanley, 10 m. W.N.W. of Almwick. It is noted as the scene of a battle in 1463 between the adherents of the houses of Lancaster and York, in which Sir Ralph Percy was killed.

Percy was killed.

Hedge-mustard, genus of plants of the order Cruciferæ. Some species are native of Britain, e.g. the common H., which in its wild state grows plentifully by the wayside to a height of 1½ ft. This has a hairy stem and small pale, yellow blossoms, with a pungent odour. It was formerly used in medicine for catarrh, etc.,

2 ft. apart. The time to cut back is and is now cultivated for domestic April or Sept. A beech H, does not thrive purposes. purposes.

Hedge-nettle, popular name of the species of Stachys (q.v.), a genus of labiate plants found in Europe, Asia, Africa, and America.

Hedge-sparrows, or Accentor modularis, species of passeriform birds belonging to the family Turdidæ; it resembles a sparrow, having brown plumage streaked

with black.

sparrow, having brown plumage streaked with black.

Hedin, Sven Anders (b. 1865), Swedish explorer, b. at Stockholm, son of Ludwig H., chief architect of Stockholm. Educated at Stockholm, Upsala, Berlin, and Halle. His work as an Asiatic explorer detes from 1893, when he began his journey across Asia from Orenburg to Pekin. He travelled via Lop-Nor and Tibet, and the journey took him four years. During these years he explored the glaciers of the Mustaghats, and the mts. around the sources of the Yarkand Daria. In 1899 he made his second Asiatic journey. On this occasion he travelled down the Tarim R. to the Lake Lop-Nor. He then crossed Tibet, travelling S.E., and made two unsuccessful attempts to enter Lhassa. Started on a new journey through China, 1920. He was ennobled by the king of Sweden, 1902. Hous K.C.I.E., 1909. Pals.: Journey through Khorasan and Turkestan (1892), Through Asia (1808, pub. in nine languages), Scientific Results of a Journey in Central Asia (6 vols., 1899-1902), Adventures in Tibet (1904), Trans-Himalaya (vols. i. and ii., 1909), Overland to India (1910), From Pole to Pole (1911), Trans-Himalaya (vol. iii., 1913), With the German Armies in the West (1915), Bagdad, Babylon, Nineve (1917), Jerusalem (1917), Southern Tibet (9 vols., 1917-22), My Life as an Explorer (1925). The Gold Desert (1929, Eng. ed., 1931), Jehol. City of Emperors (1931), Lop-Nor, the Wanderino Luke (1937), Riddles of the Gold Desert (1933), A Conquest of Tibet (1935), Scientife Results of the Gold Desert (1933), A Conquest of Tibet (1935), Scientife Results of the Sino-Swedish Expedition 1926-33 (23 vols., 1937-42), Chiang Kai-shek, Marshal of Uhina (1938). Hisdory of the Expedition to Asia. Hedimark. ev. of Norway. on the History of the Expedition to Asia.

Hedmark, co. of Norway, on the Swedish border, with Akushus to the S., Opland to the W. and S. Trondelag to the N. Area 10,621 sq. m. Pop. 167,600.
Hedon, a municipal bor. of E. Riding. Yorkshire, England, in the Holdernessparl. div., situated 8 m. E. of Hull. The industries are chiefly agric, and there are large brick-fields. Pop. 1300.
Hedonism, word of Gk. derivation signifying pleasure, hence, in ethical science, the theory that pleasure or happiness of one kind or another is the chief aim in life. Hedonistic theories have been held from the earliest times. According ness of one kind or another is the chier aim in life. Hodonistic theories have been held from the earliest times. According to one view, happiness is the chief good and moral end for each individual; according to the other, the well-being and pleasure of the general community and of all sentient creatures is the main thing to be desired. The earliest and most extreme type is that of the Cyrenaic and Epicurean schools, who taught that the

to modern writers, such as Hume, Ben-tham, and Mill, whose point of view is based on a wider conception of life, and who maintain that the only real happiness who maintain that the only real happiness is that of the community—or, at any rate, the majority; the criterion is society, not the individual. Passing on to the theories of Utilitarianism and Social Ethics, one is confronted by the problem of reconciling and adjusting the claims of the individual with those of society. An important exposition of the theory of Itilitarianism is contained in II Sideimportant exposition of the theory of Utilitarianum is contained in II. Sidgwick's Methods of Ethics, 1871. He associates the hedonistic theory of the moral standard with an intuitive theory of knowledge which utilitarians do not usually had a second of the theory of the original with the contained the second of the theory of the contained the second of the contained the second of the theory of the second of the theory of the second of the contained the second of the contained the second of knowledge which utilitarians do not usually hold. See also J. H. Murhead, Eluments of Ethics, 1892 and J. S. Mackenzie, Manual of Ethics, 1897; J. Watson, Heilmustic Theories, 1895; E. Albee, History of English Utiliarianism, 1902; C. Gore, Philosophy of the Good Life, 1930; H. L. S. Samuel, Practical Ethics, 1935. 1935.

Heem, Jan Davidsz van (c. 1600-84), Dutch painter, b. at Sandrant, or, according to Descamps, at Utrecht, son of David van Heem (c. 1570-1632), a noted stillife painter. One of the pictures of the elder van H. is in the National Gallery, London. The son surpassed his father in the variety of his still-life subjects and in technical equipment and was much the greater artist. He entered the Guild of greater artist. He entered the Guild of Antwerp in 1635 and two years later became a burgher of the city. In 1667 he moved to Utrecht. His paintings chiefly consist of magnificent vases of flowers and fruit and rich garlands against a background of green. Examples of his work are in many Ger. galleries, and at the work are in many ver, galeries, and at the Louvre, The Hague and Amsterdam, and he is also represented in the Wallace Collection, Loudon. His son, Cornelis van Heem (1631-95) was also a painter Heemskerk, Maerten Jacobsz, often called Maerten van Veen (1498-1574),



W. F. Mansell

HERMSKERK: SELF-PORTRAFT painting in the Fitzwilliam Museum. Cambridge. The building on the right of the face is the Colo-seum at Rome.

sentient pleasure of the moment is the Dutch painter, b. at Heemskerk in Holland only good for mankind. This view is studied his art under Cornelisz Willemsz known as Egoistic H. Opposed to this is and John Sohoreel, painters at Haariem. Universalistic H., which owes its growth In his early work he imitated Mabuse, but Dutch painter, b. at Heemskerk in Holland studied his art under Cornelisz Willemsz and John Schoreel, painters at Haarlem. In his early work he imitated Mabuse, but during a visit to Rome (1532-35) he came under the direct influence of the great masters. His pictures are well represented in the galleries of Europe, but in England he is best known by his drawings. His chief works are: a 'Crucifixion' (in the Ghent Museum), 'Judgment of Momus' (in the Berlin Museum), 'Triumphs of Silenus' (in Vienna), and 'St. Luke Painting the Likeness of the Virgin and Child' (at Haarlem).

Heemstede, tn. 3 m. S. of Haarlem in N. Holland. See studies by L. Prelbisz, 1911 and M. J. Friedländer, 1936. Pop. 23,700.

23,700.

Heerde, tn. 29 m. N.E. of Arnhem in the prov. of Gelderland, Holland. Pop. 5500.

Heere, Lucas de (1534-84), Flomish painter, unherited his artistic talent, as his mother painted miniatures and his father was a sculptor. There is a portrait of Queen Elizabeth at Hampton Court, where H. has flatteringly represented Aphrodite and the uster goddeses con-founded and dismayed by the beauty of the earthly queen. H. is also the author of Boomgaard der Poesije (Gardon of Poetry), 1565.

Heeren, Arnold Hermann Ludwig (1760-1842), Ger. historian, b. at Arbergen, near Bremen. His De Encomits (1785), attracted attention, with the result that in 1787 he became a prof. of philosophy, and in 1801 of hist, at Gottingen. He is regarded as the pioneer of the nuclear method of historial study. Gottingen. Ho is regarded as the pioneer of the modern method of historical study; he did not lay so much stress on political events as on the economic relations of states. His chief works are: Ideen there Politik, den Verkehr, und den Hundel der vornehmsten Volker der alten Heit (1793-96, Eng. trans. 1833), Geschichte der Staaten des Alterthuns (1791), Eng. trans. 1840), and Kleine historische Werke were pub at (jottingen in 15 vols. (1842-30).

pub at Gottingen in 15 vols. (1821-30).

Heerenveen, tn. 17 m. S.S.E. of Leeuwarden in the prov. of Friesland, Holland. Pop. 23,400.

Heerlen, tn. 121 m. E.N.E. of Mass-tricht in the prov. of Limburg, Holland. Pop. 56,300.

Hogel, Georg Wilhelm Friedrich (1770–1831), b. at Stuttgart, was the last of the four great Ger. idealist-philosophers of that period, the others being Kant, Fichte, and Schelling (2...). He was educated at the unity of Tubingen, where began his friendship with Schelling, who, although younger by five vary must rank as H.'a friendship with Schrilling, who, accough younger by five years, must rank as H.'s precursor by virtue of his extraordinary precocity—he had put sev. philosophical papers of importance even during his student days. In 1793 H. left Tüblingen, and lived by teaching, principally in Frankfort. But whilst thus engaged, his mind, stimulated by his studies of Wolff, Notte and Plate was showly maturing. Fichte, and Plato, was slowly maturing, and in 1801 he pub. a brilliant comparative critique on the systems of Fichte and Schelling, somewhat to the latter's

advantage. The same year he became a prof., at the univ. of Jena; during the five years that he spent here, he became more intimate with Schelling, and together they issued a philosophical journal. At this time, Napoleon was pressing against the Prussians, and the Battle of Jena (1806) caused the univ. to be tomporally disbanded, with the result that H. had to accept the editorial duties of a small newspaper for a time. Before long, however, he had once more secured an correlation with the idea of evolution. small nowspaper for a time. Before long, however, he had once more secured an appointment as teacher in Nuremberg, and it was during the nine years he spent in that position that he married (1811). Meanwhile, his first work of real significance had been pub., Phanomenologie des Geistes (1807, Eng. trans. The Phenomenology of the Spirit, 1894), and the Wissenschaft der Logik, the first vol. of his delinitive philosophy, followed in 1812 (Eng. trans. Science of Logic, 1894). In 1816 he left Nuremberg for a professorial chair at Holdelberg, where in the same year he produced his great encyclopedia of the produced his great encyclopedia of the philosophical sciences [mzyklopadia der philosophischen Wissenschaften], and two years later he succeeded Fichte in the chair of philosophy at the new univ. of Berlin, a post which he filled with dis-tinction until his death, from cholera, thirtoen years later. It was here that he wrote, amongst many other important works, Grundlinien der Philosophie des Rechts (18°1, i. g. trans. The Philosophy of Itight, 1896). During his later years he was esteemed the leading force in contemporary Gor. philosophical thought.

After his death many of his hitherto
unpublished lectures and essays on
religion, hist., and esthetics were collected and pub. by a circle of his chief
students and friends. Hegelianism must

be studied in relation primarily to the philosophy of Kant. Kant had contended that, whilst the value of an object was purely in the cognition thereof, and not in any degree intrinsic, a dualism existed between that object and the cognition, i.e. between the noumenon and cognition, i.e. between the noumenon and the phenomenon. H., in his development of this idea, evolved the dualism out of consideration by identifying reality with rationalism. Agreeing with Kant that it is impossible to consider life philosophically as a purely material existence apart from essential idea, he urges that reatter is non-registrate event as a personal control of the control of th matter is non-existent except as a per-ception, that is to say, an expression to an individual mind of some essential idea. He therefore proceeds to examine, not the form, but the idea, of thought; since what is true of a perception is true of the object. Hegelianism is thus the outcome of the idealisms of Kant, Fichte, and Schelling, although less remantic and Schelling, although less romantic and land legel als deutscher Nationalphilosoph, more absolute; it is divided into three headings: (a) logic, (b) natural philosophy, (c) philosophy of spirit. The Science of Logic, in which his whole system is traced out, both logically and metaphysically, has been described as the only production of modern thought worthy to rank with the Metaphysic of Aristotle; in it, H. analyses and systematises the fundamental conceptions that

moral and abstruct element of the work in correlation with the idea of evolution. Apart from the purely scientific significance of H.'s writings, they contain much of importance on religion and the esthetics of art. In religion, he was influenced chiefly by Fichte's subjective idealism. His views on art are of great interest; to him, art is a thing apart from nature, for he holds that, since art should average idea in superstiction. should express idea in sympathetic form, nature is not intrin-ically or necessarily beautiful, but is dependent for its boauty on individual perception. He classifies art, on this basis, into: (1) Symbolic, wherein the expression of indefinite ideawherein the expression of indefinite ideas is attempted on a colossal scale (e.g. Oriental architecture); (2) Sensnous or Classical, which is best exemplified in Gk. sculpture (the pagan esthetic of idealised humanism); and (3) Christian Art, a return to the symbolic in style of idea, vague and indefinite in its concept of minity and omnipotence, but more exquisitely expressed in the narrower limitations and more plastic media of painting, music, and poetry. H.'s teachings were subsequently developed in two directions, one of them on the lines of his own idealism, the other leading to arrant positivism. Of these the latter is more powerful, and tends to atheism and radicalism under Strauss, Feuerbach, and Bruno Baur, who claim their systems to be directly evolved from H., in spite of the orthodox and conservative sympathies the orthodox and conservative sympathies

the orthogonal and conservatively measured in the professed.

H.'s philosophy was the basis of the metaphysical speculations of Karl Marx, and his idealisation of the state may be said to be the underlying principle of the state of Factor (i.e. up this Cross. ideology of Fascism (see on this Cross-man's Plato To-day). It is not without interest to note that in the opinion of man's Plate To-aun, in the opinion of meterest to note that in the opinion of Netzsche, the name of Netopenhauer was better known than that of H., and yet that Schopenhauer, unlike H., was none-theless a solitary being, who had failed of his effect. His cou plete works were pub. in 1832-15 (18 vols.) and in 1927-40 (26 vols., ed. by H. Glockner). See J. Hutchmson Starling, The Secret of Hegel, 1865; Lectures on the Philosophy of Law, 1873; J. Rosenkrantz, Hegel's Leben, 1844; Hegels Adurphilosophie, 1868; and Hegel als deutscher Nationalphilosoph, 1870; C. Kostlin, Hegel, 1870; F. W. (vol. ii.), 1928; C. Nink, Hegels Phanomenologie des Geistes, 1931; K. Lowith, Von Hegel bis Nietzsche, 1941; T. M. Kaox (ed.) Hegel's Philosophy of Right, 1942.

Hegesias, Cyrenaic philosopher, lived in the reign of Ptolemy Philadelphus (309–246 B.C.) and was a disciple of Parsebets. In the main he taught the dectrines of Aristippus, the founder of his school, but he so ingrained in his pupils an indifference to life and a contempt for death, and at the same time the belief that it is idle to look for happiness where the soul is for ever imprisoned in a suffering frame, that he drove many of them to suicide. This be drove many of them to suicide. This gloomy tendency of his teaching became so alaxming that Ptolemy is said to have put a stop to his classes. H. further maintained the wisdom of complete egoism and the instability and unreality of such figments of the brain as kindness and triendship. and friendship.

Hegesias (fl. c. 250 B.c.), Gk. historian of Magnesia who enjoyed great repute as an orator. Cicero refers to him and mentions how he spoilt the pure Attle Gk. by the heedless adoption of Asiatic

idioms.

Hegesippus (c. 350 B.C.), Athenian statesman and orator, and a staunch supporter of the anti-Macedonian policy of Demosthenes. He became one of the ambassadors to Macedonia in 343 B.C., whose mission was principally to discuss the restoration of Halonnesus. In con-

nection with this subject, H. delivered his famous oration ' De Halonneso.'

Hegesippus (c. A.D. 120-180), early Christian writer, of Palestinian origin, lived under the emperors Antoninus Pius, Marcus Aurelius, and Commodus. It is a disputed question whether he was a Judalstic Christian or not. He wrote a treatise, Five Memorials of Ecclesiastical affairs, on Christian literature, unity of church doctrine, paganism, hereey, and Jewish Christianity, fragments of which are found in Eusebius. From Eusebius we learn that H. journeyed to Rome, visiting Corinth on the way. He compiled a list of the Rome, bishops down to Anicetus (A.D. 156-67), and is looked upon as the father of church hist. See M. J. Routh, Reliquice Sacræ, 1814-18; and J. E. Grabe, Spicilegium, ii., 1711. Hogira, see HEJIRA.

Hegyalia, or Hegyaliya, range of hills which runs S. between the valleys of the Bodrog and Hernad R., in N. Hungary. An extreme offshoot of a Carpathian spur, they are in the midst of the dist. where the

Tokay wines are produced.

Helberg, Johan Ludvig (1791-1860),
Dan. dramatist, was the son of the celebrated novelist who afterwards became Baroness Gyllembourg-Ehrensvard, and of the political writer Peter H., who was of the political writer Peter H., who was exiled in 1800. He attended Copenhagen Univ. and began publishing in 1814, when he brought out two romantic dramas. However, both in his satire, The Prophecy of Tycho Brake (1817), and later, when he ed. Kjöbenkanns Flyrends Post (1827–30), etc., he persistently mocked at the exand sentimentalism of Ingemann

and other popular Romanticists. A comedy entitled A Soul after Death (1841) and

comedy entitled A Soul after Death (1841) is one of the best things he wrote, whilst a little play celled The Nut Crackers (1845) contains his most pungent satire.

Heide, tr. near the N. See, 34 m. N.N.W. of Chickstadt, in Schleswig-Holstein, Germany. Pop. 11,800.

Heidegger, Martin (b. 1889), Ger. philosopher. He came into prominonce in 1928 when he pub. his chief contribution to philosophy, Time and Being. In 1933, when he was rector of Freiburg Univ., he owed allegisnee to Hitler's party; but, thinking he had made a political error, he relinquished the rectorship in 1934 and, in 1935, having reached the peak of his relinquished the rectorship in 1934 and, in 1935, having reached the peak of his fame, he was invited, but declined, to become rector of Berlin Univ. Though his reputation stood high in Germany hefore the war, it did not then, apart from philosophers, spread internationally, and yet to-day, when his influence is marked in many foreign countries, it is almost non-existent in his own. H's philosophy has been described as atheistic existentialism, mainly because his Time and Being is concerned essentially with the problem of being-in-the-world; but he himself repudiates any connection with existentialism (g.r.), with Sartre (g.r.) or even with Kierkegaard. By existence H. means man's determination to 'stand out into the truth of being' or in other words, into the truth of being 'or in other words, to pierce the meaning of his evistence. If man fails to transcend the limits of his world he is condemned to death and nothingness. He must experience the anguish of nothingness, he must first exist in the nameless, not for its own sake, but so as to realise that this nothingness is the path to being. But the problem whether a man shall be or shall not be is an event that takes place in the experience of dread. The struggle with this dread determines whether man shall annihilate nothingness and thus perceive its other side, that of being; or whether nothing-ness shall annihilate man. H.'s nihilism is comparable with Dostovsky's interpretation of suffering, which to the Russian writer, not only awakens con-scious thought but also has the power to redeem evil. H. is atheistic in the sense that he believes that God is absent from the world as well as that man has lost his dignity; whether God will reappear and man regain his dignity, has no place in H.'s philosophy, other than the consideration of the possibility of a God and of man's dignity. Both these possibilities reside in being as such, and being is above the human and above the divine. This much discussed philosophy may therefore be regarded as a part of Ontology (q.v.) in the sense in which Wolff defines it—that part of theoretical philosophy which deals with being in general as opposed to particular entities. The bulk of H.'s writings, including the second part of Truth and Being, as well as books on Nietzsche, Nihillsm, and Logos are still in manuscript and unpublished. See A. Fischer, Die Existeaphilosophie Martin Heideggers, 1935; A. de Waelhens, La Philosophie de Martin Heidegger, 1946. the human and above the divine. This

Heidelberg, tn. on the l. b. of the Neckar some distance from its confluence Neckar some distance from its confluence with the Rhine, 64 m. by rail from Frankfort-on-Main, and 12 m. E.S. E. of Manheim in Baden, Germany. The chief glory of the picturesque old city, which is guarded by the forest- and vine-clad slopes of Heiligenberg and Konizsstuhl. is the castle, which looks down on the riv. from a summit of over 300 ft. Begun in the thirteenth century, the castle was still being enlarged and beautified in the seventeenth century, but was partially blown up by the Fr. in 1689. In 1764 it was struck by lightning and was reduced to its present state of graceful ruin. The huge vat, known as the Great Tun of H, which has a storage capacity of 46,732 gallons, is entered from the castle courtyard. The famous univ. was founded in 1385 (or 1386). From here during the Reformation period Calviniet dectrines were dieseminated far and wide, but for the thirty wears of use (1518-48) its bist netorniation period (avenue doctrines were diseninated far and wide, but for the thirty years of war (1618-48) its hist. is almost a blank. The valuable library which Otto Henry began to collect, and which has at different times been housed which has at different times been housed in the Vatican and at Paris, now contains about 4000 MSS., 3000 papyri, hesides over 500,000 vols. Hitler founded two new chairs at the univ. of H. one of folk list. or 'folklore,' and the other to direct the study of the hist. of the art of war. These two swhicet, were both branches of study in which the 'azis had a special and peculiar interest, and with the closing after the war of these two depts of the univ. what seems to have been the of the univ., what seems to have been the Nazi party's sole positive contribution to the academic life of H. was brought to an end. A number of former profs. who had been dismissed by the Nazis were brought back to the univ. by the allied occupying authorities. H. is not only the oldest ther. Univ., but also in its hist, it has a name famous for religious reform and generally reforming thought, and it is probably for those reasons that the Nazis selected H. to be above all others the home of Nazi culture and ideas; but not-withstanding this pollution, something of the old tradition of H. lived on under the Nazis and was a useful foundation on which to bring about the univ's restoration after the war, though the mental desert left by the Nazis presented a desolate prospect. H. was practically untouched physically by the war, save for the pink stone bridge which was cut in the middle and all the univ building. in the middle, and all the univ. buildings were intact, but the problem was how to recreate a clean untainted academic life recreate a clean untainted academic life within the buildings; for the real problem of all the Ger. univa. after the war was not merely to re-educate their students but to start teaching again from the beginning the actual habit of thought. There is an excellent observatory on the Konigsstuhi (built in 1894), and among the antiquities of interest are the Protestant Peterskirche, where Jerome of Prague pinned up his theses in 1160, and the fine Gothic Heilige Geist Kirche, which also dates from the iffteenth century. H. 13 of some commercial importance, more of some commercial importance, more especially as trunk lines radiate to Karls-

ruhe, Würzburg, Mannheim, and Speyer, besides to Frankfort. The first president of the Ger. Republic (1919), Friedrich Ebert, was b. at H. Pop. 84,600.

Heidelberg, name of a tn. (58 m. S. by E. of Pretoria) and dist. of the Transvaal, S. Africa. The tn. lies 5029 ft. above the sea on the slopes of the Rand, and was founded in 1865. Besides being a health resort it is a gold-mining centre for the Witwatersrand fields, etc. Coal is found in the neighbourhood. Pop. (European) 2600; (other) 4500.

Heidelberg Man, remains, lower jaw and teeth, of a sub-man of the Pleistocene Age found, in 1907, at Mauer on a trib of the Rhine. Anthropologists regard the

Age found, in 1907, at Maner on a trip, of the Rhine. Anthropologists regard the remains as being of a later period than the famous Piltdown man (q.v.) though earlier than the Neanderthal. See O. Schoetensack, Der Unterkiefer des Homo Heidelbergensis, 1908.

Heidenheim, tn. in Wurttemberg, Germany. It was once an anot. Rom. settlement. The picturesque ruined castle.

Heidenheim, tn. in Wurttemberg, Germany. It was once an anct. Rom. settlement. The ploturesque ruined castle commands the tn. Pop. 24,000.

Heidenstam, Carl Gustaf Verner von (1859-1940), Swedish man of letters; b. at Olshammar in Nerlke prov. of noble parentage. As a boy he had to travel for his health, and saw Greece and the E. At Rome, he was for two years pupil to the Swedish painter Kronberg; he studied also at the Ecole des Beaux Arts, Paris. He then lived some years in Switzerland, and returned to Sweden, where he developed as a painter in words matend of pigments. The greater part of his work consists of poetry and short tales. He wrote only one book that can of his work consists of poetry and short tales. He wrote only one book that can properly be called a novel—kndymion (1889), a story of the E. His famous Karolinerna (1897-98) is a collection of tales about Charles XII. Some of his other works are: Vallfart och Vandringsår (poems. 1888). Från Col di Trada till Blocksberg (sketches, 1888), Renasans (1889), Dikter (poems, 1895), Tankar och Teckningar (1899), Sankt Gören och Druken (1900), Folke Filbyter (peasantlegend, 1905). Bjalboarnet (sequel to Folke Filbyter, 1907), Folkungatradet (1905-07), Srenskarna och deras hördingar (the Swedes and their Chiefs, 1908-90), Stridskrifter (1912), Nya Dikter (1915), Dikter—Hed raderingar av Jurgen Wrangel (1927). H. stands for colour and romance as against stands for colour and romance as against such realism as that of Strindberg. was of aristocratic and anti-levelling temper. He received the Nobel Prize in 1916 and the Hearlk Steffens Prize in 1938. A new Eng. trans. of Karolinerna, called The Charles Men, appeared in America in 1920.

Heifetz, Jascha (b. 1901), Polish violinist. Heifetz, Jacha (b. 1901), Polish violinist, b. in Vilna, studied at the St. Petersburg conservatoire, and made his first public appearance before he was five years of age, at Vilna, and in Petrograd at ten. Has played with phenomenal success in Germany, Austria, and the U.S.A.

Heijermans, Herman (1804–1924), Dutch novelist and dramatist, b. at Rotterdam. As a young man he was a frequent contributor to Amsterdam jours, under the pseudonym of 'Samuel Falkland.' He

subsequently made a marked success with |

subsequently made a marked success with novels and social dramas.

Heibronn, manufacturing tn. of Württemberg, Germany, on the Neckar, 33 mby rail N. of Stuttgart, having fine views of mts., the Black Forest, and the Voeges. It is an anct. tn. of historical interest, containing many old buildings, such as the Gothic church of St. Kilian, a Rathaus, the Gotzenthurm, and Schonthaler Hof, as well as fine modern buildings. It has reminiscences of the Emperor Charles V., Götz von Berlichingen, Gustavus Adol-Götz von Berlichingen, Gustavus Adol-phus, and Schiller. The chief manufs. are phus, and Schiller. The chief manufa are chems., machinery, paper, sugar, sait, cigars, coffee, etc. At H. the Gers. defended the Neckar line against the Amer. Sixth Corps for some days and then fought in the tn. for a week before it was cleared on April 12 (1945). Pop. 77, 200

it was cleared on April 12 (1945). Pop. 77,600.

Heil Dir im Siegerkranz,' Prussian national anthem. The words are by Balthasar Gerhard Schumacher, and the music is that of 'God save the King.' John Bull's Ayre, 1619, is an early version of the same tune, but the music as it is now sung first appeared in 1745, the reputed composer being Henry Carey.

Heilsberg (Polish, Lidzbark Warmiński),

Heilsberg (Polish, Lidzbark Warmiński), tn. of Poland (formerly E. Prussia) with dye works and tanneries, 39 m. S of Kaliningrad (Königsberg), it is situated at the confluence of the Alle and Simser. There is an old castle. Pop. 4200.

Heilsbronn (also Kloster-Heilsbronn), vil. 16 m. S.W. of Nuremberg by rail, in Middle Franconia, Bavaria, Germany. It is famous for the Cistercian monastery which Bishop Otto founded in 1132, and which f. until 1555. High interest attaches to a series of sepulchral monuments to members of the Hohenzollern family, and also to the church, which is a family, and also to the church, which is a basilica in the Romanesque style. Pop. 1700.

Heilunkiang, prov. of Manchuria, containing 25 cos. with Pehan as cap It is an elevated region with an area of 765,000 sq. m. The most important products are timber and gold. Pop. 2,564,000.

Heimdellr, in Norse sythology, the d of light. He guarded the frontiers of god of light. He guarded the frontiers of Himinbjorg (heaven) and the rainbowthe giants. Like Oliver Hoder of Teu-tonic myth, his hearing was so acut that he could hear the grass grow. Always in mortal feud with Loki for the recovery of Freyra's tolen necklace, and ultimately

they slew each other.

they slew each other.

Heine, Heinrich (1797–1856), Ger. poet and journalist, b. at Düsseldorf of Jewish descent. He was editor at the Lyceum in Düsseldorf, and began life at Hamburg in the banking business of his uncle, Solomon H., with whose daughter Amalie he incidentally fell in love. On account of his failure in business, his uncle sent him to study law at Bonn (1819), where he gave signs of literary talent—A. W. von Sohlegel being one of his earliest admirers and advisors. In the following year he left Bonn for Göttingen, but before long became entangled in a duel, and found it

advisable to leave there also. Arriving in Berlin, he was soon an eager student of Hegel; his new environment and friends, including Fouqué, Rahel, Chamisso, and the Humboldts, stimulated his genius, and the first vol. of *Gedichte* appeared in 1821. Turning again to law for a while for the poor success of his tragedles Almansor and William Ratel of (1823) had discouraged him—he graduated in 1825. discouraged him—he graduated in 1825. The same voar he spent a holiday in the Black Forest, thereby gaining the material for the first vol. of Resebilder (1826), which attracted much attention by its originality and brilliance of style. Meanwhile, he had become bapticed in the Christian faith, purely, however, for social purposes. The next few years were spent visiting London, Murich, and Italy: the visiting London, Munich, and Italy; the



HEINRICH HEINE

remaining three vols. of Reischilder were pub., and also the Buch der Lieder (1827). After another visit to Berlin (1829) and a brief sojourn in Hamburg (1829-31), H. made Paris his home, quite severing his ties with Germany; and he only revisited if for short periods in 1843 and 1847. In Paris—'the new Jerusalem'—he was welcomed by the brilliant romantic circle—Hugo, George Sand, De Musset, Gautier, Sainte-Beuve, Chopin, Berlioz, and Delacroix; and he settled down to journalism and letters, De l'Altemagne (1835), and Die Romantische Schule (1836), being his chief works of this period. He first met 'Mathilde' in 1834—Eugenie Mirat (d. 1883), a shop-assistant—first his mistress and subsequently (1841) his wife; After another visit to Berlin (1829) and a mirat (d. 1883), a sinop-assistant—first his mistress and subsequently (1841) his wife; and, sithough it is hard to understand the fascination of a hadly-educated, shallow minded grissite for H.'s sensitive artistic soul, their mutual devotion was certainly unwavering. During H.'s early years in Paris, his uncle had allowed him 4000 france a wear, but his growing sensation. france a year, but his growing separation

from the Hamburg family made it necessary to look elsewhere for support, and from 1837 to 1848 he was in receipt of a pension of 4800 francs from the Fr. gov.—ostensibly as a political refugee, although he was not associated with the young Gor. party whose revolutionary ideas had exiled them to Paris. This was the last step in his absolute self-alienation from his compatriots; his writings had already been condemned by the Frankfort Confederation Parliament (1835). Der Salon (4 vols.) appeared between this time and 1840, including his famous essays, 'German Philosophy and Literature,' written for the literate des Deux Mondes. Deutschland, a political satire in verse, was pub. in 1844, and Atta Troll, 'the Swan song of Romanticism,' in 1847. From 1848 to 1856 H. was a victim to spinal disease, but through the agonies of this last long illness, during which Mathilde nursed him devotedly, he retained full control of his mental faculties, as his ktomanzero (1851) and Neuste Gedichte (1853–54) bear witness. His Memoirs were probably destroyed; at any rate, they were withheld from pub. for family reasons, when in 1847 his Hamburg pension was restored; doubtful fragments were pub. in 1884, but their importance is as slender as their interest. During the Nazi regime (by 1910) all the works of H. were banned in Germany. H. gave a ptophecie warning to France of the revolutionary forces at work in Germany, in a passage which appears in his Religion and Philosophy. (The book was pub. in 1835, but the passage in question was deleted from the first Ger. ed. by the Prussian censor and appeared only in Fr. truns).

H.'s genius was moulded by his Ger. birth, Jewish descent, and Gk. culture; Nietzsche wrote that H. and himself were the greatest literary artists Germany had ever produced. He was the grant maitre of lyric expression; for his sense of the tragic and the heautiful was passionately intense. Gautier says that 'Heine combined the purest Gk. form with the most exquisite modern inspiration; he was a true Euphorion, the child of Faust and lovely Helen.' His work is the emotional panorame of a soul almost neurotic in its exquisite sensitiveness, its keen appreciation both of beauty and ugliness, of joyand despair. And his style is equally nervous in his portrayal of them both; on the one hand, the lyric-idealist, sometimes sentimental to a degree bordering on the ridiculous; on the other, the bitterly ironical cynic, often malicious mis satire, merciless and irreverent to the most sacred feelings of others. But, confining attention to broader issues, he was the first and greatest of a type of which, unfortunately, a medicere multitude has since arisen; a self-centred, narrow soul, of artistic and irritable temperament, aiming at hedonism, fretting at the rem of reality, a poet of happy Illusions that bring but sadness. Whilst expressing disfavour of Romanticism, he was one of its leading exponents; and whilst often coarse and brutal in his attitude towards

love, he was yet conscious of the supreme poetry of passion. Indeed, it is as the poetic psychologist of love that H. is pre-eminent; his Lyrisches Intermezzo (1823) and other poems have a wonderful fascination for translators, and have been set to music by nearly all the great song-writers—Schumann above all, Liszt, Rubinstein, Brahms, and Grieg. H.'s idealism towards life was a sanguine hope for the brilliant and glorious future of mankind—a future to be realised by fostering imagination and exsthetic culture. A Fr. ed. of his works was pub. by H., De Nerval, and others (14 vols., 1852—68); other eds.: (Ger.) A. Strodtmann (21 vols., 1861—66), E. Elstor (7 vols., 1887—90), and O. Walzol (10 vols., 1892—1905). See lives by A. Stroatmann, 1873; W. Stigand, 1875; W. Sharp, 1888; and M. J. Wolff, 1921; olso J. Weldekampf, Traum und Wirklichkeit in der Romantik und bei Heine, 1932; F. H. Wood, Heine as a Centre of his own Work, 1934; L. Marcuse, Heinrich Heine, a Life between Past and Future, 1934.

Heinecolus, Johann Gottlieb (1681—1741), Ger. Jurist, b. at Elsenberg and

Heineccius, Johann Gottlieb (1681–1741), Gor. jurist, b. at Elisenberg and educated in theology and law at Leipzig and Halle. He was made prof. at Halle of philosophy (1713), and of law (1720). He then went as prof. of law to Francker and to Frankfort-on-Oder, but in 1733 returned to Halle, where he d. His works display great learning, especially in Rom. and Ger. law. The chief are: Historia Juris Civilis Romani ac Germanici (1733), Elementa Juris Germanici (1736), and Elementa Juris Nature et Gentium (1737), trans. into Eng., 1763).

Historia Juris Civilis Romani ac Germanici (1733), Elementa Juris Germanici (1736), ond Elementa Juris Nature et Gentium (1737), trans. into Eng., 1763).

Helnecken, Christian Heinrich (1721—25), Ger. infant prodigy; b. at Lübeck; on of a painter. Spoke at ten months, knew story of Pentatuch at one year; at two was familiar with sacred hist.; at three with general hist., geography, Lat., and Fr. Could converse intelligently on subjects of his studies. Visited king of Denmark at Copenhagen, 1724.

at two was familiar with sacred hist.; at three with general hist., geography, Lat., and Fr. Could converse intelligently on subjects of his studies. Visited king of Denmark at Copenhagen, 1724.

Helnemann, William (1863-1920), Eng. publisher; b. at Surbiton, Surrey; eldest son of Louis II., native of Hanover. Educated at Drosden and at home. Studied musls in Germany; acquired taste in art. After gaining experience with Trubner of Ludgate Hill, opened as publisher, 1830, with Hall Caine's Homiman. Pub. for many notable authors; and wrote plays: The First Step (1895), Summer Moths (1898), War (1901). President, Publishers Association, 1909—11.

Heinicke, Samuel (1729-90), founder of a deaf and dumb school in Germany. He was b. at Nautschütz, Germany, and fought in the Seven Years' war, being taken presoner at Pirna. He had previously supported himself by teaching, and had one deaf and dumb pupil in 1754. In 1768 he taught a deaf and dumb boy to talk, and ten years later founded at Leipzig the first deaf and dumb institution in Germany. He adopted the methods laid down in Amman's Surdus loquens. See H. E. Stotzner, Sumuel

Heinicke, 1870; and G. and P. Schumann, Neue Beitrige pur Kenntnis Samuel

Nove Beitrige sur Kenntnis Samuel Heineckes, 1909.
Heinkel, Ernst (b. 1888), Ger. aircraft designer, b. at Grunbach, Wurttemberg. Founded the H. Aircraft works at Wassemunde in 1922, first developing wearship models of seaplanes, and later light, fast, passenger aircraft. His fighter (H.E. 113) and twin engine bomber (H.E.

(H.E. 113) and twin engine bomber (H.E. 111), and other types, were used by the Luftwaffe in the Second World War. Heinrich von Meissen (1280-1318), Ger. tyric poet and wandering singer, b. at Meissen of humble burgher parentage. He is generally known by the name of Frauenlob, a nickame which may allude to his songs in praise of women, though some engest that the reference is to his some suggest that the reference is to his song, Die Heilige Jungfrau, or again to a song in which he defends the use of the word 'Frau' instead of 'Weib.' His youth was passed in straitened circumstances, but he gradually won a reputation stances, but he gradually won a reputation as a singer at the courts of the Ger. princes. In 1278 he was in the army of Hapsburg, and in 1286 at Prague at the knighting of Wenceslaus II. It is said of him that he founded the first school of Meistersingers at Mainz. He died at Mainz, and the women of the city bore him to his grayer in the clotzers of the him to his grave in the cloisters of the cathedral and erected a monument, by cathedrai and erected a monument, by Schwanthaler, to his memory. See F. H. Von der Hagen's Minnesinger (vol. iv) 1838; A. E. Kröger's Eng. trans. of his Cantica Canticorum, 1877; and H. Kicsling, Die Lithik Fraucalobs, 1926.

Heinse, Johann Jakob Wilhelm (1719—1893). Ges parallet translates and see the cast of the control of the control of the control of the cast of the cast

1803), Ger. novelist, translator, and art critic, b. at Langewiesen, Thuringia. He was a disciple of Wieland, and had some influence on Goethe He studied art in Italy, where he also trans. Tasso's Gerusalemme Laberata and the Orlando. His masterpiece, Ardinghello (1787), contains remarkable digressions on the plastic arts, remarkable digressions of the plastic arts, and another romance, Huldegard rom Hohenthal (1796), gives his ideas on music. He served the elector of Mainz, and became state librarian. See J Schober, Henne, sen Leben und II'erke, 1882, and studies by A. Zippel, 1930; and A. Leitz-

mann, 1938.

Heinsius, Anthony (1641-1720), Dutch statesman and confidential agent of Win. Prince of Orange, b. at Dolft, and studied law at Leyden. In 1688 he was grand pensionary of Holland and guided Dutch politics until his death. In his zeal for the enmity of France.

Heir. The H. in Eng. law was the per-

Heir. The H. in Eng. law was the person who took by descent (q,v) the lands, tenements, and hereditaments (q,v) of another, the ancestor. There were also the by custom, who were entitled by certain customary modes of descent to succeed to customary freeholds, a peculiar species of copyhold tenure, which prevailed in the N. of England, and within manors of the tenure of anot. demente, or tenure by copy of court roll, but not expressed to be at the will of the lord of the manor. As noticed in the article Inheritance, the H. was an uncertain person till Nejd on the E., and on the S. by Asir. Its

the death of the ancestor, on the principle that no one is the H. of a living person Before the ancestor's death, a person could only be an heir-apparent, i.e. one whose right is certain and indefeasible, provided he outlived the ancestor and the latter d. without making a will at all, or d. intestate as to some part of the real property; or an heir-presumptive, i.e. one who, if the ancestor should die immediately, would ancestor should die immediately, would succeed as H., but whose right to succeed night be defeated by the contingency of a nearer H. being b.; e.g. an only daughter's presumptive right would be defeated by the birth of a son. (For the former rules of descent in Eng. law to real former rules of descent in Eng. law to real property, see under INHERITANCE.) The old rule of primogeniture has disappeared, and with it the equality old institution of the heir-at-law; but for the purpose of tracing title to real proporty, it is still essential for lawyers to know the old law. The term H. is still used popularly to denote the Hs. to the throne or to a title Haricom (A.S. Lown, limb or member)

Heirloom (A.-S., loom, limb or member). Hs. are those personal chattels which, by special custom, descended on death with the freehold lands of inheritance with the occupation of which they are connected; whereas ordinary chattels devolved on the executor for distribution amongst the the executor for distribution amongous anext of kin. To-day such lis. are practically unknown, and the word is used popularly to denote pictures, furniture, jewels, etc. vested in trustees to hold for the person who for the time being is entitled to the possession of a settled noticed to the possession of a settled home and are known as settled chattels. By the Law of Property Act, 1925, the rules as to the settlement of real and personal property are assimilated. The former special devolution of Hs. is indicated by the name itself, which, according to Blackstone, is derived from loom, a limb or member, and signifies a limb of the inhoritance. Deer in a park, fish in a pond, doves in a dove-rot, accompany heritable lands, and, similarly, crown lewels are said to be ils. Charters' courtrolls (evidences of title), and deeds, chests in which muniments of title are contained. also passed as Hs., and also things affixed to the freehold in such a way that they cannot be severed without damage, c.g chimney-pieces, benches, etc. Monu-ments or tombstones in a church, and coat-armour, pennous, and other insignia of honour of the ancestor, although hung up in a church, formerly passed as Hs. to his heir. Hs. could not be devised by will away from the heir. but under the Settled Land Acts, the court might sauction the sale (or purchase) of Hs.

length is 750 m., and its greatest width 200 m. Its coastline on the Red Sea is 800 m. and its area is about 112,500 sq. m. The pop. is unknown, but is variously computed at 1,500,000 to as much as 3,000,000. It is stony and altogether There have been twentythree eruptions desolate in character. The Tehama range traverses it, of which the chief summits are Jebel Shar (7000 ft.) and Jebel Radhwa (6000 ft.). The form of gov. of the Kingdom of Saudi Arabla is patridade where the same of Marked 19,1947, was preceded are hall, being in this respect in marked by an earthquake and showered dust on archal, being in this respect in marked contrast to that of Iraq (q.v.), which, under the Brit. mandate, became assimi-lated to W. models. The local or Sharian law is administered by local cadis under law is administered by local casts under chief shalks resident at Riyadh (in the Nejd) and Mecca. The chief tas. of the Hejaz are Mecca (pop. about 80.000), Jiddah, the pilgrims' port (pop. about 30,000), and Medina ('the city'), the terminus of the Hejaz railway, and famous at the burief place of Mahomet. With a terminus of the Hojaz ranway, and lamous as the burial place of Mahomet, with a pop. of about 20,000 (see MEDINA). The chief products of the II. are dates, hides fruit, honey, wool and ghi (clarified butter). Jiddah does a fair trade in hides, butter). coffee, mother-of-pearl and carpets, but the products are mainly for domestic con-sumption, and the revenue is derived. apart from that drawn from dates, chiefly from the famous if declining pilgrimages. In 1939 the number of pilgrims to Mecca was nearly 6°,000. Medina is connected with Annuan in fram-jordan, and 13 800 m. by rall from Damascus. The H. railway connects with the Bagdad railway at Aleppo (q.v.). The Palestine railway authorities administer the section from Maan to Amman. There are no roads, properly so called, in the H. From Jiddah to Mecca (15 m.) a road through the hills is in some parts metalled. There apart from that drawn from dates, chiefly the hills is in some parts metalled. There is also a track from Mecca E. through Riyadh to Uqair on the Persian Gulf a Riyadh to Uqair on the Persian Gulf a distance of 820 m., which is used for motor transport: and a similar route connects Jiddah with Medma via Rabigh. Small ports on the Araban coast are El Wijh, Yambo-el-Bahr, Rabigh and Jiddah (or Jedda), which contains the reputed tomb of Evo, mother of mankind. The easis of Khaibar, E. of the railway, has large aren, counsting of the descendants. a large pop. consisting of the descendants a large pop. consisting of the descendants of former negro slaves, with a centre at Kasr el Yahudi. Abdul Aziz ibn Saud, Sultan of Nejd, having thrown off the Turkish yoke before the First World War, completed the conquest of the H. in 1926, the kingdom of the Hejaz and Nejd Arabia. The unification of Ibn Saud's dominions under their joint name of Saudi Arabia was effected by a decree of Sept. 22, 1932. For the hist, of the H. (and Nejd) in the First World War, see ARABIA.

Hejira, and after Hejra, or Hegira ('flight,' from Arabic hajuru, to go away). signifies the tlight of Mohammed from Mecca on Sept. 13, A.D. 622. Since the institution of the new Moslem calendar by

68 m. E. of Reykjavik. Elevation 5108 ft. There have been twentythree cruptions since the ninth century, the last in 1947. By the outbreak of 1845, fine lava ashes and dust were scattered as far as the Orkney Is. 500 m. away. The next cruption of March 29, 1947, was preceded by an earthquake and showered dust on Copenhagen, 1,250 m. away.

Hel, or Hela, in Scandinavian mythology, was the daughter of Loki and of the glantess Angovrhoda. She below the roots of the sacred ash Yggdrasil. She ruled over the nine worlds of Helheim, the ahode of the dead, and of the old and sick. After

of the dead, and of the old and sick. After the introduction of Christianity, her dwelling-place became synonymous with hell, the abode of the wicked dead.

hell, the abode of the wicked dead.

Helbou, see Aleppo.

Helder, Den, seaport at the N. extremity of Holland, situated on the Marsdiep at the enfrance of the Zuider Zee. There is an excellent harbour at Niewe Diep, the E. side of the tn., and there are fine embankments. The great Helder Dyke, constructed of Norwegian transfer is 5 m. long and there is a great grante, is 5 m. long and there is a good road along the top of it. It is an important naval and military station. H. has ant naval and military station. H. has also an observatory, lighthouse, zoological station, and tn. hall, etc. It was first iortified by Napoleon in 1811. The Dutch fleet, under De Ruyter and van Tromp, defeated the king. oif the coast in 1673. H. may be said to have marked the Dutch for N. end of the constant blockade which Allied naval forces maintained without interprution throughout the without interruption throughout the second World War from the Biscay and Channel coasts, from the Gironde to Den Helder. Pop. 31,500.

Helen, or Helena, heroine of the Trojan War and the most beautiful of women. She was the daughter of Zeus and Leda, and the sister of Castor and Pollux. She was carried off by Theseus to Attica, but was rescued by her twin brothers. She chose Menelaus out of many suitors, but subsequently descrited her husband and lied with Paris to Troy. This led to the Trojan war, which lasted for ten years. After the death of Paris she married his here the death of Paris sne married nebetrother Delphobus, whom she later betrayed to the Gka, and returned with Menclaus to Sparta. According to one tradition, on the death of her husband she married Achilles and lived with him in

Helena: (1) Co. seat of Phillips co., Arkansas, U.S.A., situated on the Missis-sippl at the foot of Crowly's Ridge, 50 m. S.W. of Memphis, Tennessee. It is served by three railways and is a port of entry and the head of navigation for ('llight,' from Arabic hajura, to go away), entry and the head of navigation for signifies the tight of Mohammed from Meoca on Sept. 13, A.D. 622. Since the cotton-seed products and lumber. Pop. institution of the new Moslem culendar by 8500. (2) Co. seat of Lewis and Clarke Caliph Omar (640), the Mohammedan era has dated from this event, being distinguished by the letter A.H. (anno hepira). 50 m. N. %. of Butte. It is the seat of The Mohammedan year is a lunar one, and Montana Wesleyan College and of the

is supposed to have discovered the holy rood and sepuichre of our Lord at Jerusalem (326). Her festival is celebrated on Aug. 18. Sev. other saints of the Catholic Charach here the name amount has been determined. Church have this name, among them being Olga, wife of grand-duke Iger, who changed her name to II. at her baptism

Helena (d. A.D. 359), daughter of Constantine the Great and of Fausta. She married her cousin Julian, whom her brother Constantius II. made Carsar at

brother Constantius 11. made Carear at Milan (3:5). Her only son was supposed to have been killed at birth through the instigation of the Empress Eusebia.

Helensburgh, police burgh and holiday resort on the firth of Clyde, Scotland, in the co. of Dumbarton, at the mouth of the Garelood, opposite Greenock. It is 231 m. N.W. of Glasgow and 71 m. W. of Edinburgh by rail. It is a well laid out modern tn. and a centre for excursions. It is famous as the bp. of steam navigation. in Europe. The jetty from which Honry Bell, the owner of the famous Comet, made his early experiments can still be seen opposite his house, now a hotel. St. Bride's School for girls was founded in 1895. Pop. 9900.

Helenus, soothsayer of Gk. legend, the son of Priam and Hecuba. He foretold the fall of Troy to the enemy, and after the slege saved the life of Pyrrhus by warning him not to return home by sea. He accompanied Pyrrhus to Epirus, over part of which he ruled, and Pyrrhus gave him

Andromache, the widow of Hector.

Helford River, Cornwall, rises 4 m. W.
of Ponryn and flows into the English
Channel between Rosemullion Head and Nare Point. Frenchman's Creek is a famous beauty spot on the S. side of the

riv.

Helgoland, see HELIGOLAND.
Helland, The (O.E. Hælend, Saviour),
ninth-century old Saxon poem of the life
of Christ. The best texts are the Cotton of Christ. The bost taxts are the Cotton MS, in the Brit. Museum, and the Munich MS., which are printed side by side in Slever's ed., 1877. From internal evidence modern scholars have concluded that it was written by the author of the

Rom. Catholic institutions of St. Aloysius and St. Vincent, and others. It is a large commercial centre, with lumber and guartz mills. There are gold, silver and iron mines in the dist. Pop. 15,000.

Helena, St. (Flavia Julia Helena) (c. 247c. 327), wife of Constantius Chlorus, and the mother of Constantius Chlorus, and the mother of Constantine the Great. She is supposed to have discovered the holy rood and sepulchre of our Lord at Jerus and sepulchre of our Lord at Jerus and sepulchre of constanted on the constant of planes can now do so. The principle of the II. is partly adopted in the gyroplane, an appliance that not only has the four rotating planes set at angles to gain an upward movement, but is also equipped with a screw that drives the whole machine against the air, thus gaining some of the advantages of the aeroplane method. Hs. were introduced experimentally in 1948 for the collection and delivery of mails by the lift. Post Office and in 1949 for the transport of goods and building materials to places inaccessible by road. Research to places inaccessible by road. has been devoted recently to the applica-tion of jet propulsion to Hs., where the lifting rotor is driven by ram jets mounted at the blade tips.

at the blade tips.

Heligoland, or Helgoland, an is. of Germany, in the N. Sea, lying 40 m. N.W. of the mouth of the Elbe, and 28 m. from the nearest point on the mainland. It was once a Brit. possession (1807-90), and was ceded to Germany (1890) in return for concessions in E. Africa, being formally incorporated in the Frussian prov. of Schleswig-Holstein in 1812. The is. is an long, its greatest breadth being less than a third of a m. It is a rocky plateau, with a sand bank, the Dünsen-Insel, of the E. coast. On three sides the is. rises nearly perpendicularly from the is, rises nearly perpendicularly from the sea, forming a grass-covered triangle called set, forming a grass-covered triangle called the Oberland. It is a popular bathing resort. In accordance with the treaty of Versallies (1919) the fortifications, military estabs. and part of the naval harbour were, or were supposed to have been, razed. But the 12-inch guns of the Schroder Battery came out of the old battle cruiser Derfflinger, which was also supposed to have been demolished with her armament. II. provided one typical instance of the cursory way in which the disarmament of Germany was conducted after the First World War. Many of the tunnels were bricked up across the en-trances by the Gers, and faced with care-MS. in the Brit. Museum, and the Munich MS., which are printed side by side in Slever's ed., 1877. From internal evidence modern scholars have concluded that it was written by the author of the fragments of a version of the story of Genesis which, with the H., is all that survives of Old Saxon poetic literature. Helicon, mt. range in Bcotla, Greece, situated between the gulf of Corinth and Lake Copals. It is celebrated in classical literature as the abode of the Muses; near by were the fountains, Aganippe and Hippocrene, which were said to give poet inapiration. The W. summit, Palæovoun, rises to 5000 ft.; the E. summit is called 225078.

Helicopter. Type of aeroplane in which the machine is equipped with one

of the fortress had by then been destroyed, and only the enormous labyrinth of underand only the chormous hapyrinth of under-ground workings romained. There were in 1945 more than 8 m. of tunnels; the lowest, lined with Eng. brick, was con-structed when II. was a Brit, colony. All the Ger.-built tunnels were lined with concrete, the most modern being made in 1940 by 25,000 conscripted labourers. The U-boat pens were often hit by bombs but only chipped. The power-station was protected by a great concrete bunker under the oliff. During a big raid just belore the Ger. surrender the old tn. on before the Ger, surrender the old tn. on the Oberland and the residential quarter on the flat land below were obliterated. The only structure on the Oberland to remain infact was the control tower of the great fort. The fortifications of H, were blown up by the R.N. on April 15 (1947) with 6700 tons of explosives which were detonated in the underground chambers and passages. One of the primary objects of this operation was the destruction of the U-hoat per s, elaborate structures of reinforced concrete in the destruction of the U-hoat pers, elaborate structures of reinforced concreto in the inner harboin. This task was completely achieved. Also the labyrinthine tunnels and caves—81 m. in all—which the Gers, used for storage and defence were most adequately shattered; as also were the batteries of heavy guns and the power installations. The physical aspect of the is, was changed a little by the explosion; its S. tip was ilattened and the chiffs, 180 ft. high, were no longer there. Heligoland Bight, Battle of. Heligoland Bight is that area of sea about the is, of Heligoland off the N.W. coast of Germany. The W. end of the Kiel canal enters the mouth of the R. Elbe, which

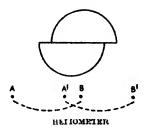
Germany. The W. end of the Kiele canal enters the mouth of the R. Elle, which empties into the Bight. The area was therefore one of great Ger, naval activity during the First World War. Immediately war had been declared, Brit. submarines kept a perpetual watch upon Ger. shipping here, venturing far into the protected area and noting the loutine of protected area and noting the loutine of the various units of the flect. It was therefore arranged to make a sweep of the Bight in the early hours of Aug. 28, 1911, by the light cruser force at Harwich under the command of Commodore Sir Reginald Tyrwhitt. The Bight was de-fended by three lines of warships. Hefore dawn on the appointed day Tyrwhitt's force was approaching its objective, and immediately it was sighted by the Ger-ships they souttled back to the shelter of immediately it was sighted by the Ger. ships they scuttled back to the shelter of Heligoland at top speed, without trying conclusions with their opponents. The day was misty, and this favoured them. The Arethusa and Fenrless distinguished themselves on the Brit. side. One Ger. destroyer which failed to regain Heligoland was sunk. After this first brush the day conjugate the con

This Brit. victory was a severe blow to the Ger. Navy, although it did not come as a surprise to those in authority, who were convinced that their forces could not hold their own against the Brit. They therefore decided not to risk a battle again but

fore decided not to risk a battle again but to reduce the Hrit. fleet by submarine and mino action. (See also Dooger Bank.)
Heliodorus of Emesa in Syria, the earliest of Gk. romance writers. He is known by his Æthiopica, the MS. of which was discovered in 1526 in the library of Matthias Corvinus, and was printed in 1531. It is in ten books, and narrates the stay of the layers. Theserous and Charles. story of the lovers Theagenes and Charle-lea. Consult G. A. Hirschig, Scriptores Frotici, 1856, and an Eng. trans. in Bohn's Classical Library.

Heliogabalus, see ELAGABALUS.
Heliograph, instrument used for sig-ualling swiftly between two distant points, by means of flashing the sun's rays from the face of a mirror. The flashes are made to follow each other in accordare made to follow each other in accordance with a pre-arranged signal code. The mirror, from which a part of the mercury back has been removed, is mounted on a tripod and two sights are provided in front with a screen. The sun ray is then directed through both sights, and the flash can be seen at a distance of many miles, the range of the H. flash de-pending upon the size of the mirror. If the mirror is directed at exactly the required spot, its flashes cannot be read at a distance of more than 10 yds, on either ade if the distance away is 1 m., or for more than 50 yds, at a distance of 2 m.

Heliogravure, see PHOTOGRAVURE. Hellometer, astronomical instrument for measuring the dameters of celestial bodies or their distances from one another, it was invented by Fraunhofer in 1814 and, as its name indicates, was first used



to obtain solar measurements. The H. is an equatorially mounted telescope with its themselves on the Brit. side. One Ger. destroyer which failed to regain Heligoland was sunk. After this first brush the Ger. cruisers began to come out and look for their opponents. The Ger. Manz put up a good fight before she was sunk. She had become detached and could get no support. Adm. Beatty with his battle cruiser squadron now entered the battle, and immediately the Ger. cruisers turned to run to asfety, but they were too late, and the Ariadne was sunk, and a little later the Koin met the same fate. stars formed by one half of the glass, and 1 or 2 ft. high, and the scent of the flower A^1 B, the images formed by the other greatly resembles that of the vanilla; it half. The halves of then glass are separated by a distance AA^1 or BB^1 . If they in Greece, and H. Europæum in S. Europe ated by a distance AA or BB'. If they are now still further separated till A' coincides exactly with B, the distance between the stars is exactly equal to the amount by which the two haives of the class are separated.'

glass are separated.

Heliopolis (the city of the sun): (1) anct. city of Lower Egypt, called in the Bible On. It stood 5 m. E. of the Pelusiac branch of the Nile at the apex of the Delta. It was the chief seat of the Egyptian sunworship, and was famous for its schools of philosophy and astronomy.

The site of the anct. temple is marked by a red granite obelisk. A short distance a red granite obelisk. A short distance from the ruins of the anct. city stands New H. It was founded in 1906 by a Belgian Co. It is in a healthy situation and is well laid out with broad streets and squares. It has churches, mosques, a sporting club and swimming bath, a racing course and club. There is a fine aerodrome. A railway is projected from New H. to Suez. Pop. 23,000. (2) The Gk. name for Baalbek (q.v.).

Helios. Gk. god of the sun known to the

Helios, Gk. god of the sun, known to the Roms. as Sol. Ho was the son of Hyperion and Thea and the brother of Hyperion and Thea and the brother of Selene and Eos. In Honner (Odyssey, viii.) he is described as a god who rises from Oceanus in the E. traverses the heavens, seeing and hearing overything on his way, and descends to Oceanus in the W. Later writers tell of a magnificent palace in the E. from which he comes forth in a flexy charlet described for the logical and of fifty chariot drawn by four horses, and of another palace in the W. His horses grazed on the Is. of the Blessed. The is. of Thrinacia was sacred to him; there his daughters Phætusa and Lampeta tended his flocks. He was worshipped through-out Greece and in the is. of Rhodes, where the mighty Colossus was crected to

Heliostat, see SIDEROSTAT.

Heliotherapy, see SUNLIGHT TREAT-

MENT.
Heliotrope, see BLOODSTONE.

Heliotrope and Turnsole are popular names applied to sev. species of *Heliotropium* (q.n.). The H. plant most commonly cultivated in Britain is *Il Peruvianum*. Winter H. is a common name of Petasites fragrans, a sweet-smelling

species of Composites.

Heliotropism. The direction of the rays of light affects the position of plant members, and it is these phenomena which are termed H. Stems and leaves grow towards the source of light, as may commonly be seen in window plants, and are said to be positively heliotropic, and are said to be positively helictropic, and members, such as roots, which grow away from the light, are said to be negatively helictropic. Young growing parts of plants respond norse quickly to light than older parts.

Helictropium, genus of boraginaceous plants, contains numerous species which inhabit tropical lands and are often cultivated because of their trarent blescome.

vated because of their fragrant blossoms. H. Peruvianum, the Peruvian belietrope,

and the Caucasus.

Heliotype. Process connected with photography and printing. In the development of a negative, the effect of light and shade are obtained by burning away the gelatine in places, and thus causing a relief effect. By using this fact and printing from a suitable form of press, prints can be obtained from the actual gelatine surface, without covering it with timeful as is done in the case of Stanna. tin-foil as is done in the case of Stanna-

Heliozoa, name given to a group of Protozoa commonly called the sunanimalcules. Some have no skeleton, and in some cases they have a gelatinous membrane. Chlamydophora, which have alwars a gelatinous envelope; Chalarothoraca, which have a skeleton of silicious spicules; and Desmothoraca, which have a stalked or unstalked shell with numerous

pores. H. are widely distributed, and are both freshwater and marine.

Helium (from Gk. Mos, the sun), an inactive gaseous element. Lockyer observed in 1868 a bright yellow line in the spectrum of the golar chronosphere close to but not identical in position with D. line of sodium. He ascribed it to a hypothetical element helium. Hillebrand had noticed that an inert gas was evolved when the mineral eleveite was treated with acid. Rambay, repeating these experiments, found that the inert gas refused to combine with oxygen, and on submitting it to Sir William Crookes for spectroscopic examination the spectrum was found to be characterised by a bright yellow line coinciding with the new line discovered by Lockyer in the solar spectrum. The name helium way, therefore, adopted for the new gas. if is abundant in many minerals, all of which contain uranium and barium as important constituents. richest known mineral source is thorianite. which is mainly thorium oxide, and con-tains about 9.5 c.c. per grain. II. is also present in the gases which escape from the water of hot springs and in the atmo-sphere, of which it constitutes four parts in a million. To prepare H from thorian-ite, the mineral is treated with utric acid, when the H. is liberated together with hydrogen, oxides of carbon, and a trace of nitrogen. The hydrogen is removed by nitrogen. The hydrogen is removed by sparking the mixture with oxygen, and the remaining impurities are removed by Dewar's method of absorption with char-coal cooled in liquid air. The H. alone is unabsorbed by the charcoal, and it can the pumped off in a state of perfect purity. The prin. source of H. is the natural gas (mostly consisting of methano) issuing from petroleum wells in certain of the United States and in Canada (Medicine Hat).

Properties.—It is chamically inert. Its density is 1 98, referred to hydrogen as 1. The ratio of its specific heats is 1 66, so that its molecules are monatomic. H. Peruvianum, the Peruvian heliotrope, atomic weight is, therefore, double the turnsole, or charry-pie, is a shrub growing density, i.e. almost 4. Its solubility in water is less than that of any known gas. It approximates more closely to the ideal gas than hydrogen. In 1908 Kamerlingh Onnes of Leyden University succeeded in liquefying it. Its holling point is 4.3° abs., the density of the liquid is ·154, and its critical temp. is 5° abs. Solid H. was obtained by Kelsom in 1928. Its melting-point is only one degree above abs. zero. The a-particle expelled by radium, thorium, uranium, and actinium abs. zero. The a-particle expelled by radium, thorium, uranium, and actinium is identical with the atom of H. This conclusion is based on the following experimental evidence: (1) All a-particles have the same mass and differ only in their velocity of expulsion. This mass has been measured, and has been found to be the same as the mass of the H. atom: (2) The 'emangilon' from radium which (2) The 'emanation' from radium which expels a-particles (radon) was stored in a thin-walled but perfectly gas-tight glass tube, enclosed within a wider vessel. After some days the gas in the outer vessel was found to contain H. It was proved that when H. was stored in the inner tube. none passed through the glass into the outer vessel. In this experiment the velocity of expulsion of the a-particle was o great that the particle could get through thin glass. When it was brought to comparative rest in the space surrounding the thin glass vessel, its properties were identical with those of the atom of H. There is a 1, and well of evidence that one atom of a radio active substance expels but one a-particle at each disintegration. Hence the change from radium to H. may be expressed quantitatively thus:

226 = 222 + 4 Radium = Radon + Helium.

The numbers denote the atomic weights. The atomic number of 11. is 2. Its atom is next to that of hydrogen in simplicity of structure, its nucleus consisting of 4 protons and 2 electrons; the revolving or orbital electrons are thus two

in number. H. had at one time considerable commercial importance as a gas for filling airships. It has not quite so much lifting power as hydrogen, but possesses the in-estimable advantage of being completely non-initammable. For commercial purposes II. is obtained from natural gas that issues from the curth in Kansas and other dists, of the N. Amer. continent (see above). The gas after purification is liquefied as far as is necessary to condense all the constituents except H.; it is then deave off and stored. Millions of cubic drawn off and stored. Millions of cubic feet of II. can thus be obtained per annum at a very reasonable cost.

H. is the lowest member of the group of 'rare,' 'noble' or inactive gales, of which other star members are neon, argon, krypton, xenon and radon.

Heliz, the snail typical genus of Helicides, and contains sev. thousand species; H. hortensis is the common furopeam snail, and H. pomatia, also found in England, is called the Rom.

Eng. rendering of sev. Heb. and Gk. words with distinct connotations. Hence very considerable confusion has arisen. The various words represented thus are the Heb. Sheol, and the Gk. words Hades (\$\delta_{\delta}\text{p}\), Tartarus (\tau\delta_{\delta}\text{p}\), Tartarus (\tau\delta_{\delta}\text{p}\), and Gehenna (\tau\delta_{\delta}\text{p}\). It will be well first to trace slightly the development of the Heb. conception of Sheol, trans. also in the A.V. sometimes as 'grave' and three times as 'pit.' The earlier view is well represented yit.' The earlier view is well represented in passages of the Psalms xxxi. and lxxxvill., from which we see that Shehl is conceived of as a region outside the jurisdiction of Yahweh. and as independent of His existence. Sometimes the dead are here regarded as cognisant of earthly affairs, sometimes as totally ignorant of According to the former of these views, which is also the earlier, the dead retain their self-consciousness, and the retain their sent-consciousness, and the state of affairs in Sheol is a shadowy reproduction of the earthly life. According to the later view, which is fully elucidated in the Book of Job (especially chaps. vii., xiv., and xxvi.), Sheol is equivalent to uter destruction. It is the land of sleep, of utter forgetfulness, and silence. The dead are ignorant of what passes on earth, and are unable to affect its affairs. The ame view 14 put forth in Eccles. ix., where vv. 5 and 10 insist on the fact that all knowledge has forsaken the dead. Considerable development of eschatological conceptions is seen, however, in the post-exilic writings, and the doctrine of the exilic writings, and the doctrine of the resurrection comes into prominence, partly as a result of Persian influence. Two passages, in particular, are of importance as containing a clear enunciation of this doctrine, viz. Isa. xxvl. 1-19, and Dan. xii. By the second century B.C. the general conception of the abodes of the departed had taken a more clearly-defined form, and Gehenna is the name given to the final abode of the wicked, where they suffer endless torments by me, while Sheöl is an intermediate state or both rightcous and wicked, divided mto four parts, two for the wicked, two for the rightcous. The Sadducess, how-ever, still sustained the anct denial of a resurrection. In the N.T., Hades is used by the place of departed spirits. Gehaving tor the place of departed spirits, Gehenna for that of endless (aiwros) punishment for the wicked. Tartarus occurs once (2 l'et. ii. 4) as the abode of the fallen angels. There has been much controversy as to whether the Gk. adjective discretion is equivalent to eternal in the modern sense of the term, that is to say, never ending. The noun aww is frequently used for a long 'period of time,' and from the time of Origen onward, there have been those who held the opinion that ultimately the punishment of the most wicked and even of the devils would have an end, and that thus all would be saved. This is not, however, the common conception of the Early or Medieval Church, for here we find phrases which contain no ambiguity. found in England, is called the Rom.

Snail.

Hell, popularly conceived of as the place in which the finally impenitent of Protestant divines. The pains of H. suffer eternal torment, is in the A.V. the

spiritual, the latter consisting chiefly of the torments of despair and remorse. The difficulties of the doctrine, based as it is on the actual word of Christ, are great and terrific, and have never been felt more keenly than in the modern age. With it the destribe of the translated the designable that the destribution of the content is involved theologically the doctrine of the freedom of the will; only a deliberate and utter rejection of God can separate a soul from Him; therefore no-one can attempt to form an estimate of the fate of others, since apparent wrong-doing may be due to want of deliberation or to ignorance.

Hell, tn. in the prov. of Sor Trondelag, It is situated on the Trondhjem Norway. Flord, 20 m. from Trondheim and on the direct railway from Sundsval to Oslo.

direct railway from Sundsval to Osio.

Hellah, see Hillah.

Hellah, see Hillah.

Hellahicus, or Lesbos (c. 495-411 B.C.),
early Gk. historian, b. at Mitylene in Lesbos. The works attributed to him are:
The Priestess of Hera at Argos; Atthis;
Carneonike, etc., in all about thirty
chronological and historical works. Consult C. W. Müller, Fragmenta historicorum,
1841-72; and J. B. Bury, Incient Greek
Wisdorians, 1909.

Hellas, dist. of S. Thewalv, often identified with Phthiotis. The Gks., who called themselves "Σλληνς (Hellens), after their mythical founder "Ελλην (Hellen), son of Deucalion and Pyrrha, came to use H. to denote all the lands on which they settled, but more particularly the main-land of the Pelopounesus.

Hellbender, see MENOPOME. Hell, Die, valley in the Swartberg (Black Mts.) of Cape Prov., S. Africa inhabited by a farming community of 90 people, descendants of Huguenots who fied from France after the revocation of the edict of Nantes in 1685. The towering rock wall of the Swartberg shuts them off from the world and they have no radio, on from the world and they have no radio, no now-papers, no telephones and because of the lack of roads they are beyond the reach of any wheeled vehicle.

Helle in Gk. myth, the maiden who gave her name to the Hellespont. With

Phrixus, her brother, she fled on the golden-fleeced ram to escape the person-tion of her step-dame, Inc. and fell into the strait, now called the Hellespont, and was

drowned.

drowned.

Hellebore, popular name of species of the ranunculaceous genus Helleborus, found only in Europe. They are sometimes employed in medicine, and when used in moderation they possess stimulating properties; in large doses they act as a fatal poison. H. niridis, the green II., is indigenous to Britain; is herbaceous below, shrubby above, and bears pale green flowers. H. niger, the Christmas rose (q.n.) has white flowers which turn green after tertilisation. A species of Liliacee, Ventum album, is known as the green after tertilisation. A species of Liliacem, Veratrum album, is known as the white H. root.

white H. FOOT.
Hellebore, False, see VERATRUM.
Hellefors, com. and tn. of Sweden in the prov. of Orabro. Pop. 5000.
Hellen, in Gk. legend, was the son of Dencalion and Pyrrha. He ruled over Phthictis and gave to his subjects the mame of Hellenes. His three sons, Æolus,

Helleniam. The term was made popular in England by Matthew Arnold, who used it to denote the principle of classic purity in art, as opposed to Hebraism, which expresses itself as 'romantic' exuberance in art. The word is more correctly applied by Droysen to the phase of rectly applied by Proyen to the phase of Gk. culture prevalent in the second and third centuries among certain Examicrated Alexandria, people, not Gk. by birth, who had adopted the language and customs of anct. Greece. The Hellenistic language is a peculiar form of Gk., with many Heb. and Aramale words and idloms. See P. Wendland, Die hellenistischeromische Kultur in ihren Bezichungen zu Judentum und Christentum, 1907; R. Cohen, La Grèce et l'hellenistion du monde antique, 1939; M. Rostovtrov, The Social and Economic History of the Hellenistic World, 1941. World, 1941.

Hellenist (from the Ok. Adapticer, to imitate the Gks.), a term applied to a person who adopts the manners and customs of anct. Grocce. It was first applied, during the first and second centuries, to the Jows of Alexandria, who laid aside the language and customs of the Hebs, for all the usages of the Gks. See also HELLEN-

Heller, Stephen (1815-88), Austrian musical composer, b. at Pest. At the age of nine he made some sensation as a boy planist. He studied in Paris, and became one of the set of which Chopin, Lizzt, and Hallé were prominent members. He wrote entirely for the planoforte and still retains his popularity with amateur players. H. visited England in 1849 and

players. H. Visited England in 1819 and 1862. See life by H. Barbedette, 1876. Helles, Cape, at the S. end of Gallipoli, near the entrance to the Dardanelles, Here Anzae trops were first landed at the beginning of the Gallipoli campaign in the First World War (see Gallipoli Cam-PAIGN).

Hellespont, see DARDANELLES.

Hell Fire Club, see under MEDMENHAM. Hell Gate, or Hurl Gate, narrows formed by is, in the E. R., New York, U.S.A. near the unction with the Harlem R. and the bend towards Long Island Sound, where at certain states of the tide there is a whirl of currents. John Nowton (1823-95) was the engineer, who, at the instance of the Federal Gov., conducted the blasting operations in 1885, which removed the dangerous rocks and deepened the Channel. H. G. Bridge is a tine now structure which crosses the strait in a single span and has made possible the direct rail service from Boston to Washington, che.

Hellin, to. of Spain in Albacete, situated near the the R. Mundo in a rich wine-and oil-yielding country. There are sul-phur mines and warm sulphurous springs, which were known to the Rouis. Pop.

Hellovo, see OTHRYS.
Hellovo, see OTHRYS.
Helmand, or Helmend, see HELMUND.
Helmbrechts, tn. of Germany in Bavaria,
20 m. N.E. of Bayrenth. Pop. 6000.

Helmet, protective covering for the head. At the time of the Norman Conducts a conical 11, with nose-piece was worn with or without safeguards for the ears and nape of the neck. The casque conduct of the great Quaker, William was usually made of strong hide, strong- Penn. H. was delicated in early life and thened with small iron plates. In the elevanth contury a moll-lood was strongthened with small iron plates. In the eleventh century a mail-hood was attached to the casque. A century or so later a beaume of heavy iron was frequently worn over a light basinet. The knights of the fourteenth century wore long pointed visors, that could be moved up and down, while the obels well was work low. while the chain mail was worn low over



ROMAN HELMET

the shoulders. They bore their crest-high on their Hs. The salade or sallet of the next century had a low, rounded crown and a long neck-guard. Other variations of the H. are the armet, burgonet, morion, and cabasset. Firemen of gomet, morion, and cabasset. Firemen of all countries, and the policemen of some, wear Hs. The soldiers of all modern armies are equipped with steel Hs. See J. Hewitt, Ancient Armour and Weapons in Europe, 1860: G. F. A. Laking, Record of European Amour and Arms through Seven Centuries, 1920–22; H. Norris, Costume and Fashion (in course of pub.) pub.).

Helmet-shell, name given to members of the genus Cassis, gasteropod molluses belonging to the family Cassidide, found in tropical seas and the Mediterrancan.
They resemble wholks in appearance,
having thick heavy shells with prominent edges; some species attain considerable size, and, as they are composed of differently coloured layers, they are much used in the manuf. of cameos. C. madagus-carensis is the largest of these, and C. rufa and C. cornula are also commonly used.

Helmholtz, Hermann Ludvig Ferdinand ven (1821-94), Ger. philosopher and man covers the summit. The helm bar is a

became a student by habit; he soon showed mathematical powers. In later years his attention was directed to higher mathematics by force of circumstances. He could not afford a purely scientific career, so he became surgeon in the Prussian army. In 1842 he wrote a thesis, in which he announced the discovery of nerve cells in ganglia; this was his first work, and from 1842 to 1894, the year of his death, scarcely a year passed without work, and roll 1612 to 1634, the year of his death, scarcely a year passed without sev. important papers on scientific subjects from his pen. In 1819 he became prof. of Physiology in Konigsberg; and subsequently in Bonn and Heidelberg. In 1871 he became prof. of Physics in Berlin, and in 1887 nominated head of the Chanterphysic Forthers We proceed. Berlin, and in 1887 noninated head of the Charlottenburg Institute. His pub. works melude Sensations of Tone as a Physiological Basis for the Theory of Music (1873). Set J. C. McKendrick, Helmoltz, 1899. Helmond, tn. of N. Brabant, Netherlands; on the Zuid Willems Canal, 23 m. W. of Venlo. It has manuis. of textiles, etc. Pop. 26,000.

Helmont, Johann Baptist van (1577-1611), Belgian chemist, b. at Brussels; educated at Louvain, where he became prof. of surgery. For some years he devoted himself to the study of mysticism, but was turned to chemistry and natural but was turned to chemistry and natural philosophy by the works of Paracelaus. He spent some years in France, Switzer-land, and England, but in 1009 settled earr Vitvorde and devoted himself to chemical investigations. He made a special study of 'gases,' and estab. the present scientific sense of the word 'gas,' and investigated the chem precised as and investigated the chem, properties of the fluids of the human body. His chief work, Ortus Medicina, was pub. by his son in 1618.

Heimstedt, tn. of Brunswick, Germany. 24 m. S.E. of Brunswick. It is noted for nanufs. of machinery, pottery, woollens, etc., and near it are valuable mineral prings. It grow up in the ninth century round the monastery of St Ludger, and from 1575 to 1809 was famous for its univ. Gounded by Duke Julius. It gained in.

from 1575 to 1809 was famous for its univ. founded by Duke Julius. H. gained importance after the Second World War as the 'frontier' station on the railway line to Berlin, councering the W. and E. zones of occupation. Pop. 17,600.

Helmund, Helmand, or Helmend, riv. of Afghanistan, 11-ing in the Koh-i-Baba chain, S. of the Hindu Kush, and flowing S.W., W. and N.W. into the lake of Hamun, Sectian, or Savaran, near the Persian frontier, after a course of 680 m. Nunerous tribs, ilow into it from S. Afghanistan. In its lower roaches it is wide and deep, but dries up at certain seasons. The water-power is largely used for mills.

Helots (Ch. Liberts or Liberts), serfs of the anot Spartans. The word was de-lived in antiquity from the tin of Helos in Laconia, but is more probably connected with thos, a fen, or with the root of chew, Some scholars suppose them to be of the Achean ruce, but they were more probably the aborigmes of Laconia, who had been enslated by the Athrens before the Forlan conquest. After the second Messenian was the conquered second Messenian was the conquered Messenians were reduced to the status of H, from which Epaminond is liberated them three centuries later after the battle of Leuctra (371 BC). The H were state slaves to the soil and assigned to individual Spartiates to till their holdings I heir masters could neither emancipate thom nor sell them off the lan i, and they were under an oath not to raise the rent payable yearly in kind by the H In time of war they served as light armed troops or as rowers in the fleet — From the Peloponnesian war onwards, they were employed

nesian war onwards, they were employed as heavy infantis, and distinguished bravery was rewarded by consecutation. Helpmakar, to of Klip R dist, Natal, Africa, 80 m N of Pletermaritzburg Formerly a Brit. military post, it had some importance during the Zulu war (1879) and

the Boer war (1900-02). Pon 26,000 Helps, Sir Arthur (1913 7), Engesavist and historian, and cirk to the Privy Council, b at stretham surrey He was the on of a London merchant, and was educated at I'ton and Trinity (ollege, After leaving the univ he Cambridge campringe After leaving the many no was prin the secretary to various public men, and, in 1911, his circumstances rendering him independent of employment, he retired to Bishop's Waltham, and devoted himself for twenty wars to study and writing Appointed in 1860 study and writing Appointed in 1860 Clerk to the Privy Council he became a far unit of Queen Victoria who en trusted him with the task of editing the specific and Addresses of the Pri uc Con-sort (18/2) and her own Leares from the Journal of our Life in the Highlands (1468) The first of his own pubs was I houghts in the Cloister and the Croud (1835) Coeris of aphotisms, and then came I says written in the Intervals of Business (1841). Friends in ()uncil (4 series 1517-)) and Conversations on 1) ar and General (ulture (1871) As a member of the emversazione Society he was associated with such men as Allicd Tennyson Arthur Hallam and Monkton Milnes In hist he wrote the Conjuerors of the New World (1848-52) and The Spanish Conquests in America (4 vols., 1815-61), a useful work collating the records of many carly sp contains the records of many carry of and other foreign instortant. Also wrote The Lafe and I alsours of Mr Thomas Brassey 180°-1870 (1972) and biographics of Bartolomé de las Casas, Columbus, Pizarro, and Contr., denived largely from the foreign records. the foregoing works. His cssays were, however, his most successful work, containing the thoughts of a shrewd and ex perienced man written in what Ruskin called 'beautiful quiet English.' They

roll of cloud that forms in front of it to leeward.

Héloise, see ABÉLARD

have not, however, any exceptional depth or originality See E. A. Helps (ed) Correspondence, 1917

respondence, 1917
Helpmann, Robert Murray (b. 1909),
Brit, danseur and actor, son of James
Murray II, of S Australia Educated
at Prince Alfred's College, Adelaide
First appearance 1926 30 under J C
Williamson's Monagement, Australia
Premier danseur, Sudler's Wells ballet
from 1933 Played Obsern in a Mid from 1933 Played Obeton in a Mid summur's Aight Dream (1937-38), Gremio in Jaming of the Shrew (1939), Hamlet in Old Vic production, New Theatre (1944), Blamino in The White Divil and Prince in He II ha Gets Slapped, Duches, Theatre (1947) Appeared in the film One of our Aircraft is Missing, as the bishop of I ly in the film, Henry V (1911) and Wyecroft in Caracan (1946) Chorcographer and premier danseur in Red Shoes, Choreographer of Comus, Hamlet, The Birds, and Corrobaree

Helsinborg, fortified scaport of Sweden, situated on the Sound, opposite Lismore, 32 m N W of Malmo It has a good har bour a fishing industry, and manufs of sugar, chems, and michintry. It figured largely in the candinavian wars, being almost destroyed in the reign of Charles The Danes were defeated here in N

Pop 59,000 1710

Helsingor, or Elsinore, seaport of Denmark, situated on the is of Zealand, in the prov of I redearksborg, and on the E coast at the narrowest part of the Sound, N of Cepenhagen and oxactly opposite to Helsingborg in widen Lothe N L is the fortress of Kronborg (1930)
The harbour, enlarged in 1883 84, has 18 20 ft of water and is much used by whips for coaling and repairing There is a patent slip and large shipbull ling yards, a patent slip and large shipbull ling yards, a patent slip and large shipbull ling yards, while good anchor were after led by the roadstead outside. The Sound dues were collected here! Il 18,7 It is the by of Suxo Grammatten and the scene of Shake-peare's Hamlet. Pop. 18,900

Helsinki (Holsingfors), scaport and cap of Imland and prov Nyland Centre of the administrative scientific, educa tion it and indu tiril life of kinland tine narbour is divided into two parts by a primontory and is protected at its entiance by a grup of small is, upon one of which stan is the fortiess of Sveaborg A third harbour is situated on the Walde of the promontory and all three have granite quava the city, which in 1810 hid only 10! Inhaby, Åbo, the then cap hiving 10, 21, has increased with great ripidity having 22 000 inhabs, in 1800 62 000 in 1890, 170,000 in 1910, 216,000 in 1926, 293,000 in 1939, and 338 800 in 191). It is the centre of an active shipping trade with the Bultic poits and with Lu-land, and of a railway system cennecting it with all parts, it mossesses will street a makes, gradens, and possesses wide structs, parks, gardens, and monuments. The pell square contains the cath drai of St. Nicholas, the senate house, and the univ , all striking buildings of considerable architectural distinction. The univ which was founded in 1640 at Turku (Abo), was removed to H. after

having been burned down in 1827. It had (1947) over 9000 students (3700) women). The language of culture is Swedish. The manufs. of the city consist swoodsn. To manus, or the city consistency of tobseco, beer, spirits, carpets, machinery, and sugar. H. was savagely bombed by Russian planes in the Russo-Finnish war of 1939-10. See also Fin-LAND, History.

Heist, Bartholomeaus van der (1613-70).

riess, parinoiomesus van der (1913-70), Dutch painter. Probably b. at Haarlon, and said to have been a pupil of Franshals. He also studied under Nicolaes Elias of Amsterdam. He was living in Amsterdam in 1638, and in 1634 was joint founder, with Nicholaes de Helt Stokade, of the Painters' Guild of St. Luke. His best work is in portraiture, and in His best work is in portraiture, and in-cludes 'Muster of the Burgher Guard' (1648), in Amsterdam Museum, which is his linest production and contains twenty-four full-length portraits; 'A Protestant Dame' (1638), at 'The Hague; 'The Company of Captain Rogloff Bicker' (1639), and 'The Syndies of the Brother-hood of Saint Schastian' (1663), both in Amsterdam Muscum.

Helston, might, in, of Cornwall England

Amsterdam Museum.

Helston, mrkt. tn. of Cornwall, England,
10 m. S.W. of Folmouth. Noted for the
Furry' or 'Flora' Dance, held annually
on May 8. It was made a bor. by John
in 1201: from the reign of Edward I. to
1832, returned two members to Parlament, and che till 1832. Pop. 5000.

Helveliya, nat methe lake dist., Cumberland, England, between Thirlmere and
Ullawater. It is one of the highest peaks
in England (3118 ft.), and is fairly case of
ascent, while magnificult views may be

ascent, while magnificent views may be obtained from the summit. Famousteep approaches from the E. side are the Striding and Swiff Il Edges. See Lakt DISTRICT.

Helvetia, Swiss colony and tn. in Santa 76 prov. Gran Chaco, Argentine Republic, 50 m. N.C. of Santa Fe, founded in 1856. Pop. 2500.

Helvetic Republic, system of gov., consequent upon the occupation of Switzer-land by the Fr. imposed by them in 1798, and abolished to allow of the re-organisation of the old cantonal system by Napoleon in 1803.

Napoleon in 1803.

Helvetii, anct. Celtie nation, which, according to Cassar, inhabited a region roughly corresponding to the W. part of modern Switzerland. Their chief th, was Aventicum. They first appear in hiet, as allies of the Cimbel during their invasion of Italy, but are best known in connection with their invasion of S. Gaul in 58 B.C., when they were repulsed by Casar with great slaughter. They were again defeated by Cavina, a general of Vitellans, after the death of Nero. See E. Howald and E. Meyer, Die 18mische Schweiz. 1940

Helvetius, Claude Adrien (1715-71), Fr philosopher and littrateur, descended from a family of physicians whose original name was Schweitzer (latinised as Helvetius). His grandfather introduced the use of ipecacuanha. His father was first physician to Queen Marie Leczinska of France. Claude Adrien was trained for a financial career, but occupied his spare

time writing verses. At the ago of twenty-three, at the queen's request, he twenty-three, at the queen's request, he was appointed farmer-general, a post of responsibility and dignity, worth 100,000 crowns a year. Thus provided for, he proceeded to enjoy life to the uttermost. As soon as he had saved enough from his receiver as farmer-general he retired to position as farmer-general, he retired to an estate in the country, and employed his large means for the relief of the poor. De l'esprit appeared in 1758, and this both attracted attention and roused formidable opposition for the 'pernicious doctrines' in its philosophy. The author wrote three retractations, yet he had to give up his office at court, and the book was publicly burned by the hangman. Madamedu lefland said that he had written openly what everyone thought secretly. His philosophy belongs to the Utilitarian school. The keynote of his thoughts was that public ethics has a utilitarian basis, and he insisted on the importance of cul-ture in national development. His De time in national development. His De Nomme and Le Bonheur were posthumonsly pub. in 1773. See D. G. Mostratos, Die Fadagopik des Helvetrus, 1891, and study by A. Keim, 1997.

Helwan, tn. of Egypt, near R. Mie, 10 m. S.E. of Cairo, noted on account of its warm sulphur springs. Before the First World War the pop. was about 5000, but since then it has decreased greatly.

Hemaka, Tomb of, see under Sakkara.

Hemaka, Tomb of, see under Sakkara.

Hemaka, Tomb of, see under Sakkara.

Hemaka, Felica Dorothes (1793-1535), Eng. poetess, b. in Laverpool, the daughter of George Browne. She was a precodous child, and was encouraged in her taste for

child, and was encouraged in her taste for poetry. She pub. a vol. of verse as early 18 1808, and another entitled. The Domestic Affections (1812). In this year she married Capt. II., an Irish officer who had served in Spain. In 1818 they separated, after the birth of live sons, Capt. H. setting in Italy, and Mrs. II. Isting in N. Wales, Lancashre, and Dublin. Her work is not strong, but graceful and pleasing. She suffered from a fatal tacility, but some of her pathetic and soutimental poems became very popular. A complete (a. of her works was publicationally in 1839. They include: liceords of Woman (125), The Forest anctuary (1826), Songs of the Affections (1830). See H. F. Cherley, Memorials of Mrs Hemmas, 1836. child, and was encouraged in her taste for

It is a centre of the straw-plaiting industry, and also has boat-making, paper-making, iron-working, tanning, and brewing industries. A Rom. ville has been discovered at Hoxmoor clebe by. There are fine public buildings, and it has lately developed as a satellite in. Pop. 11,300. Hemelingen, vil. of Hanover, Germany, 3 m. S.E. of Brenien, with a cigar-making industry Pop. 10,000.

Hemerocallis, see DAY LILY.

Hemerocallis, see DAY LILY.

Hemianopia, peculiar and rare form of impulses to the surface of the brain are disease of the eye, usually due to disease within the brain, causing sight to be limited to one half of an object.

Hemicrania, see HEADACHE, and Mr-

Hemidesmus, see SARBAPARILLA

Hemiksem, industrial tn. in Belgium, 6 m. S.S.W. of Antwerp, on the Scheldt. Chief manufs. are copper, lime, and cement. It has brick-works and breweries. Pop. 9200.

Heming (or Hemminge), John (d. 1630), Eng. actor. He is known to have been one of the chief proprietors of the Globe Theatre during the reign of Elizabeth, and Theatre during the reign of Elizabeth, and is connected with Shakespeare in sev. ways. He is said to have created the part of Falstaff, and also played in sev. of Ben Jonson's dramas. With Henry Condell (d. 1627), he was a co-editor of the first folio of Shakespeare, issued in 1023. Hemingtord (or Hemingburgh), Walter (d. 1347), Eng. chronicler. He was subprior of St. Mary's, Gisborough, Yorkshire, and died there. His chronicle extends from 1066 to 1346, and was pubby Gale in his Veteres Scriptores, and by Hearne (Oxford, 1731), and tully ed. in 1848-49 by H. C. Hamilton.

Hemingway, Ernest, b at Oak Park, Illinois, 1898. Educated in the public schools of his native state, he worked as a day-labourer, farm hand, and news-paper reporter. Went to France before America entered the 1914-18 war, as a volunteer in an Amer. ambulance unit. Later enlisted in It. Arditi and was severely wounded. He made his début as author in 1923, and then attracted wide attention with his vol. The Sun Also Rises (1926), this was followed by Men Without Women (1927). It was, however, in 1929 that he definitely estab. his reputation as one of the strongest of the newer genera-tion of Amer. authors by his novel A Farewell to Arms (1929), a story dealing with the adventures and love affair of an with the adventures and to e attain of an Amer, in an ambulance corps serving with the It. army. Since then he has been widely read in America, and, under his influence especially, a whole school of 'tough' novelists has grown up, though none has equalled his best work. Despite his increasing tendency to establish some connection between his stories and political or social conditions, there perpolitical or social conditions, there persists in them a certain suggestion of the love of violence for its own sake, which limits their appeal still further than it has already been limited by the endeavour to sustain indefinitely an interest in simple declarative sentences describing the action of unreflective characters. His For Whom the Bell Tolls (1940) was inspired by his experiences in the Sp. Civil war. Hemiplegia, paralysis of one side of the body. It is the most usual form of paralysis, and affects the leg. the arm, and also

Hempiegia, paralysis of one side of the body. It is the most usual form of paralysis, and affects the leg, the arm, and also the muscles of the mouth and tongue. If the paralysis be on the right side, aphasia (q.v.), often accompanies H. Complete recovery is possible but not very frequent. Slight numbness, and not complete paralysis, of sensation, accompanies H., although if the fibres carrying sensory

impulses to the surface of the brain are destroyed, there may be loss of sensation on the affected side. In certain cases there may be paralysis on the side opposite to the affected limbs. See PARALYSIS. Hemipters, name given to a large order of insects which includes the bugs, planting and insulations and in all of called

lice, scab-insects, etc., and is also called Rhynchota. All individuals belonging to this order are characterised by a mouth consisting of a proboscis or jointed beak, which is concealed by being bent back under the thorax; wings, with rare exceptions, four in number, and the anterior pair more horny than the posterior pair. All H. are sucking insects, and the mouth of the individual, like that of Orthoptera, does not change during its lifetime, but they differ from all other orders of insects they differ from all other orders of insects in respect of the structure of the mouth. The order is divided into Heteroptera, whose wings, partly horny and partly membranous, fold flat on the back; and Homoptera, whose wings cover the body in a rooflike manner. The Anoplura, or Lice, are sometimes included in this group, or may be regarded as a separate order. See B. F. Cummings, The Bed-Bup, 1917; E. A. Butter, Biology of British Hemiptera-Heteroptera, 1923; J. Davidson, List of British Aphidies, 1925; Davidson, List of British Aphides, 1925; W. L. Macatee and J. R. Malloch, Revision of the American Bugs. 1925; J. G. Myers, Insect Singers: Natural History of

Insect Singers: Natural History of Cicadas, 1929.
Hemling, Hans, see Memling.
Hemlook, name given to sev. plants of different characteristics. Two of these are umbelliferous species and occur in Britain. Cicula rirosa, the water II. or cowbane, is one well-known plant, and Conium maculalum, the common H., is another; both contain a deadly poison. The latter has a mouselike smell, and is well known as the plant from which the poison drunk by Socrates was obtained. The H. spruce is an evergreen coniferous tree found in N. America, and bears the botanical name of Tsuga Cunadensis. It is a valuable plant on account of its bark, which is employed in tanning, the pitch which is employed in tanning, the pitch

Hemmingsen, Niels (1513-1600), Dan. theologian, b. in Laaland; educated under Melanchthon at Wittenberg, becoming prof. of Gk. there in 1543 and of dialectics in 1544. In 1578 he returned to Denmark and became minister of the church of the Holy Ghost at Copenhagen, and professor of Heb. in Copenhagen Univ., which he made famous for its Protestantism. In 1577 he became prof. of divinity there, and in 1579 a canon in the church of Roschild. He assiste of the Bible into Dan. He assisted in the first trans.

Hemorrhage, see HAMORKHAGE, and BLEEDING.

erect stalk, growing from three to sixteen) ft. high according to climate, square in shape, like the common stinging-nettle, five to seven-fingered leaves of lanceolateacuminate form with serrated marging, and is diosclous. The seed is a valuable product, being used as bird-food, and, when crushed, as oil for soap and cilcake.



The H. plant secretes a resinous substance possessing narcotic and intoxicating possessing narcotte and intokrating qualities (see Hashish), while Indian H. or Bhang has proved of value as a hypnotic in therapeuties. It. is, however, most valued for its fibre, which is obtained by burying the stoms in mud and leaving them to rot for seven days, when they are them to rot for seven days, when they are taken out and beaten in the water and all the woody matter is removed, a treatment similar to that of flax (q.v.). The latest (pre-1940) world statistics give a total production of 7.30,000 tons (Philippines or Manila, 230,000; China (probably, 150,000; Russia, 140,000; Italy, 100,000). Manilla Hemp, from the fibre of the long leaves of a species of hannu tree is an leaves of a species of banana tree, is an important industry in the Philippines, about 183,500 tons being produced annually. Sisal II. from the Agare siselana growing wild in Yucatun, Mexico, cultivated in Brit. and Portuguese W. Africa and Dutch W. Indies, is greatly used in the U.S.A. for making ropes and binder twine. Sunn II., or brown H., from the bark of Crotalaria juncea, is not as strong as true H., but resists water botter. New Zealand H. is a growing industry. See also Fiber and Fiber Status, a practical treatise on the culture of Hemp for seed and fiber, 1900; H. it. leaves of a species of banana tree, is an Hemp for seed and fibre, 1900; H. R. Cartor, Modern Flax, Hemp, and Jule Spinning and Twisting, 1925.

H. The modern city, built of black basalt, is mean, dirty, and crowded, and is surrounded by half-ruined walls. The only anct. relies are columns, inscriptions, foundations, and fragments of pavements. There is considerable trade in silk, cotton, oil, gold ware, and sesame. In anct, times, as Emesa, it was famous for its Temple of the Sun, of which Heliofor its Temple of the Sun, of which Heliogabalus, emperor of Rome in 218, was a priest. In 272 the Emperor Aurelian defeated Zenobia here. It was taken by the Saracens in 636, and by the Crusaders in 1098. Ibrahim Pasha defeated the Turks here in 1832. A railway was opened in 1925 from H. to Tripoli, 64 m. Pop. 100,100.

Hemsterhuis, Tiberius (1685-1766), Dutch philologist, b. and educated at Groningon. In 1704 he became prof. of mathematics and philosophy at Amsterdam; in 1720 professor of Gk. at Francker, and in 1740 prof. of Gk. hist, at Leyden.

dam; in 1720 professor of GK. hist. at Leyden. He created a new school of Gk. hist. at Leyden. He created a new school of Gk. philology, which includes among its representatives Ruhnken and Valckenaer. He issued famous eds. of works by Pollux, Lucian, and Aristophanes His son Franz (1721–1790) was a noted philosopher. Hemsworth, vil. of W. Ridling of Yorkshite, England, 64 m. N.E. of Barnsley. Pop. 12,300.

Hemy, Charles Nanier (1841–1017)

Hemy, Charles Napier (1841-1917), Eng.
marine painter, b. at Newcastle-on-Tyne;
son of Henri F. Hemy, distinguished musicial. Educated in art at Newcastle and
Antwerp. He made sev. voyages as a boy,
and at one time joined the Dominicans
at Lyons; but finally settled in England
in 1870, living in London till 1881, when
he removed to Churchfield, Falmouth.
He became a member of the R.W.S. in
1897; A.R.A., 1898; R.A., 1910. His
works include: "Homeward," Oporto,"
'Silent Adleu," Pilchards," Lost (1897),
'smugglers," (1899), "Home Wind,"
Birds of Prey" (1901), 'The Crew"
(1902), 'Youth (1903), 'The Lifeboat'
'Haul Aft," London River," The Crab
Merchant' (1904), 'Bound for London'
(1907), 'Plymouth, Through Sea and
Alr' (1910), 'Home at Last' (1913), 'The
Black Fing' (1913).
Hen, see Poultry. Hemy, Charles Napier (1811–1917), Eng. Hen, see POULTRY.

Henault, Charles Jean François (1685-1770), Fr. historian. His father was a furner-general of taxes, and a man of hterary tastes. The son was educated at a Jesuit college. In his fifteenth year he a Jesult college. In his litteenth year he entered the Oratory, with the view of becoming a preacher. His literary talent obtained his entrance to the Academy. The literary work upon which he bestowed his chief attention was the Abrige chronologique de l'histoire de France, first pub. in 1744 without the author's name. In the compass of two yels he comprised the ompass of two vols. he comprised the whole hist, of France from the earliest times to the death of Louis XIV. This work was a prodictious success, and was trans, into sev. languages, even into Hampstead, vil. and summer resort of Nassau co., New York, in Hempstead township on the Long Is. R., 20 m. E. of Brooklyn. It was settled by New Englanders in 1643. Pop. 13,000.

Hems, Hums, Homs, or Khoms (Lat. Emesa), city of Syria, near R. Orontes, 63 m. N.E. of Tripoli, cap. of the Sanjak of whitish-yellow flowers which are followed

by an erect capsule dehisting by means of its lid. The H. has an extremely disagreeable odour, hence its name. but in medicine it is sometimes used as a narcotic and sedative.



Henderson, cap. city of Henderson co., Kentucky, U.S.A., on R. Ohio, 10 m. S. of Evansville. The chief industry is the preparation of tobacco. There are coal mines in the dist. Pop. 13,100.

Henderson, Alexander (1583-1646), Scottish ecclesiastic, b. in Criech, Fifeshire. Graduated at st. Andrews in 1603, and in 1610 was appointed prof. of rhetoric and philosophy and questor of the faculty of arts. Shortly after this he was presented to the living of Leuchers. As he was forced upon his par. by Archbishop Gladstanes, and was known to George Gladstanes, and was known to sympathise with cyl-copacy, he cettle-ment was at first unpopular, but he changed his views and became a Presbyterian in doctrine and in church gov., and one of the most esteemed munisters in Scotland. H. is one of the greatest of men in the hist, of Scotland, and next to knox is certainly the most famous Scotdivine. He was once called tish 'Cabinet minister without office.' The existing Preshyterian churches of Scotland are indebted to him for the forms of their dogmas and their eccles, organisation. He

the reformed church of Scotland. Henderson, Arthur (1863-1955), Brit. Labour politician; b. in Glasgow. Educated at St. Mary's School, Glasgow. Served apprenticeship as moulder at Robert Stephenson & Co.'s works at Newcastle-on-Tyne. He became M.P. for Barnard Castle in 1993, and so remained until the general election of 1918. He was chairman of the Parl, Labour Party, 1908-1910; and on the coming of the First World War, when J. Ramsay MacDoneld had to stand uside because of his pacifism, H. was again chosen chairman; and he so remained until 1917. P.C., 1915. He Eng. verses, contained in the Harl. MS. was: President of the Board of Education, 1915-16; Paymester-general and etamzas, rhymeda a b a a b, each of which

is justly considered the second founder of

labour adviser to Gov., 1916; member of war-committee of Cabinet, 1916-17. Gov. emissary to Russia, 1917. He resigned from the Coalition Gov. because of Lloyd George's banning of the Stockholm Labour Conference in the last-mentioned year. Early in 1924, having been returned for Burnley, he joined the first Labour Gov. as Home Secretary. In the Labour Gov. formed June 1929 he became Labour Gov. formed June 1929 he became foreign secretary, in which office he was responsible for the Anglo-Egyptian Treaty (signed after his death, in 1936) under which the Brit. Military occupation was terminated. In 1932 he presided over the Genova disarmament conference, and the Goldva disardiment conterence, and received the Nobel Peace Prize in 1931.

Sec E. A. Jenkins, From Foundry to Forum Office. The Romantic Life of the 1st. Hon. Irthur Henderson, 1933.

Henderson, John (c. 1747–85), Eng. actor, b. in London. He made his début

at Bath in 1772 as Hamlet, and came to be known as 'Bath Roscius.' In 1777 he appeared at the Haymarket, London; in 1778-79 with Sheridan at Drury Lane; and after 1779 at Covent Garden. He was a friend of Mrs. Siddons and Gains-

borough. He was successful in many Shakespearean rôles. Henderson, Sir Neville Meyrick (1882-Henderson, Sir Neville Meyrick (1882–1912), Brit. diplomat, educated at Eton. Attaché in diplomatic service, 1905. Secretary, at successive periods, at St. Petersburg, Tokvo, St. Petersburg (recond time). Rome, Nish and Paris. Counsellor, at Constantinople, 1921, and Acting High Commissioner there, 1922–21. Minister to Egypt, 1921–28; to France, 1929–29; and to Yugosiavia, 1929–35. Ambas. to Argentine and Minister to Paraguay, 1925–37. Ambas. to Germany, 1937 until 1939 (Sept.). It thus fell to his lot to hold the most important diplomatic post in the service at a tant diplomatic post in the service at a time when the brit. Gov.'s appearement policy was in full operation; and when at length, the incasure of Hitler's similar intentions were apparent it was too late. (See on this the article World War, SEGND.—(ARSES.) He wrote Failure of a Mission (1910) and The Water under the Bridges (autobiography, pub. in 1945).

Henderson, Sir William Hannam (1845—1821).

1931), Eng. adm., b. at Worth, Sandwich, June 20. Commanded the Conquest June 20. Commanded the Conquest (1889-92), and served under Sir Edmund Fromantie in the punitive expedition spanst the sultan of Vitu, E. Africa, 1890. Commodere and senior officer in Jamaica during the Cuban War. In 1902 promoted to flag rank and appointed adm.superintendent at Devouport; full adm., superintendent at Devouport; full adm., 1998. He will be remembered as a reformer of naval education, who saw the value of systematic instruction in strategy and tactics. H. derived his appreciation of the importance of this subject from Sir E. B. Hamley, Operation of War (1867), and he received much guouragement in his efforts from Prince Louis of Battenberr. berg.

Hending, Proverbs of, series of Middle Eng. verses, contained in the Harl. MS. 2253 (Brit. Mus.), consisting of six-lined

closes with an old folk proverb, many of which are still in common use. The pro-verbs seem to have been collected from

older thirteenth-century material. Hendon, bor. of Middlesox, England, on R. Brent, 8 m. N.W. of St. Paul's London. A favourite residential suburb of London, and is also a popular holiday resort, the 'Welsh Harp' reservoir of Regent's Canal being much used for skating, fishing, canal being much used for skating, helling, etc. Until recently it was an important aviation centre with aeroplane works and flying schools. Mill Hill, just to the N., has a large Nonconformist Grammar School (1807), and a Rum. Catholic Missionary College (1871). The Mctro-cellton Bales Callege (1871). politan Police College was opened at H. in 1934. Golders Green and Hampstead Garden Suburb are within the bor. Pop. 128,500.

Hendrick, Burton Jesse (1871-1949), Amer. historical writer and hiographer, b. Amer. historical writer and biographer, b. at New Haven, Conn., U.S.A., and educated at Yale. He began as a journalist on the New Evening Post and then joined the staff of McClure's Magazine; from 1913-27 he was an associate editor of The World's Work. His first book was The Age of Big Busines, the title of which perhaps affords an indication of his major interest as a student of Amer. Inst. He was awarded the Pulitzer Prize for his part in The Victory at Sea (1920), written in collabor the world Adm. Win. S. Sims (a.v.). But he will be chiefly remembered in collaboration, with Adm. With Sains Infining industry. 10p. (collab.) 22,500. (q.v.). But he will be chiefly remembered Henie, Frederich Gustav Jakob (1809-in this country, firstly, for his Late and 1885), Ger. pathologist and matemist. b. Letters of Haller H. Pauc. a full and in Franconia. His famous Manual of attractive portrait of a great ambas, and Hallonal Pathology (1846-52), marked a great man; and for his Late of Andrew (use era in pathological study. From Carnogle (1933). The Lite and Letters, which is 1852 to 1873 he was pub. bis great Handattractive portrait of a great ambas, and a great man; and for his Life of Andrew Carnegie (1933). The Life and Letters, which was pub. in 3 vols between 1922–25, is remarkable for the wealth and history cal importance of the material prepared by H. In 1933 was pub. another vol., on The Earlier Lafe and Letters, which fully maintains the interest of its predecessors. The first instalment of his work earned him a Pulitzer Prize for the second time. him a Pulitzer Frize for the Second which For The Training of an American (1928) he received yet a third Pulitzer Prize. His Life of Carnegie, his best piece of biography proper, is an illuminating study both of character and of a tremendous age of industrial expansion. His later books include two on the great issues of the Crvi War: Stalesmen of the Lost Cause (1939) and Lincoln's War Cabinet (1947), showing with shrowd irony opposite sides of the

with shrewd fronty opposite saids of the great struggle,
Hendricks, Thomas Andrews (1819-85),
Amer. political leader, vice-president of U.S.A. in 1885, b. near Zanesville, Ohio. Graduated at Hanover College, Indiana, and in 1843 began a successful career at the Bar. From 1868 till his death he was the forward for nonvinction for the put forward for nomination for the presidency at every democratic convention, save that of 1872. He had been U.S. Senator from Indiana from 1863 to

case of the death of both president and vice-president, the line of succession shall run through the Cabinet in the following order—secretaries of state, treasury, war, attorney-general, secretaries of the navy and interior.

Heneguen or Sisal Hemp, see FIBRE AND

FIRROUS SUBSTANCES.

Hengelo, in. of Overlissel, Holland, 5 m. N.W. of Enschede, an industrial centre. There is a large cotton industry, also dyeing, brewing, and railway engineering. Pop. 45.500.

Hengist and Horsa, brother chieftains who led the first saxon bands which extited in England. They were apparently called in by the Brit. king, Vortigern, to defend him sgainst the Picts. The place of their landing is said to be Ebbsfleet in Kent. The settlers of Kent are described by Bede as Jutes, and there are traces in Kentish custom of differences from the other A.-S. kingdoms. II. and II. were at first given the Isle of Thanet as a home, but soon quarrelled with their but, allies, and gradually possessed them-selves of what became the kingdom of Kent. In 455 there was a battle between the two brothers and Vortigern, and Horsa was slain. Thenceforward Hengist reigned in Kent together with his son.

Henin-Lietard, tn. of Pas-de-Calais, France, 7 m. N.W. of Douai, with a coalmining industry. Pop. (comm.) 22,500.

book of Systematic Human Anatomy, Henlein, Konrad (1898–1945), Sudeten-Ger. politician, b. at Maffersdorf, Reichenberg. Was once a bank clerk. Began a Ger. gymnastic movement in Bohemia soon after the Pirst World War. Took a leading part in organising the Sudeten fer. party in Czecho-lovakia and in 1936 he succeeded the extremist trads union leader Kaspar as head of the party. With support from the Nazis in Germany he abandoned the rôle of constitutional he abandoned the role of constitutional lovalist seeking the redress of minority grievances and demanded first autonomy for the Sudctenland and later the com-plete transfer of that ter, to the Ger. Reich. After the anachluss his followers were absorbed into the Nazi party and when Czechoslovakia was occupied by the Gers., H. was appointed chief of the civil administration in the Protectorate. (See CZECHOSLOVARIA.) Later he became Civil Commissioner for Bohemia. He committed suicide in an allied-prisoner-of-war camp cage by slashing his wrists with a razor blade which he had concealed under adhesive tape in his cigarette case (May

10, 1945).
Henley, John (1692-1756).
Henley, b. at Melton Mowbray, educated
henley, b. at Melton Mowbray in Mel-U.S. Senator from Indiana from 1863 to Henley. John (1692-1556). 'Orator 1869 and governor of the state, 1873-77. Henley, 'b. at Meltou Mowbray, educated In 1882 he ran for vice-president when at Cambridge: became a teacher, and Grover Cleveland was his party's presitook holv order, having charges in Meldential nominee and this time was successful. He died shortly after assuming office ton, Sugalk. In 1726 he left the church and this gave rise to the passing by Conandestab. In London his famous 'Oratory.' gress of the law which provides that in Hero he preached primitive Christianity on Sundays, and taught 'universal knowledge 'on Wednesdays, attracting large
numbers by the strangeness of his methods
and doctrines. In 1730 ho became a pensioner of Walpole and editor of the High

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Harms substance well from the large

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and doctrines. In 1/30 to became a penisoner of Walpole and editor of the High Doctor. He wrote Lether in 1714.

Henley, William Ernest (1849-1903), Brit. poet, critic, and editor, b. at Gloucester, and educated at Crypt Grammar School in that city. T. E. Brown, the poet, was headmaster there for some time. His appointment was a stroke of luck for H., to whom his coming meant the lad's first introduction to a man of genius. To the end, H. was no classical scholar, but his knowledge of and love for literature were vital. At the age of twenty-five his health failed, he was sent to a hospital in Edinburgh, and from there he sent in Edinburgh, and from there he sent poems, describing his experience in the ward, to Leslie Stephen, who was editing the Cornhill. The poems were full of poignant force, and Stephen visited his contributor in hospital, in company with Robert Louis Stevenson. The meeting between H. and Stevenson, and the friend-ship which arose between them, form one of the best known episodes in recent literature. In 1877 H. went to London and began his editorial career by editing London. At the end of 1886 he came bethe Scots Observer, and had the knack of discovering literary men. It was that paper which gave to the world Kipling's Barrack-room Ballads (1892) H. excepted by the widness of the scots ercused by his originality an inspiring in-tiuence on the higher class of journalism, but his fame must rest on his poetry. As an editor, with a profound conviction in the soundness of Conservation and imperialism, he often erred about transient tendencies and events; but his trenchant leaders of the early 'nneties on such sub-jects as the development of Socialism, or on India or Burma, show that he was often uncannily and prophetically right H.'s physical sufferings have been said to H.'s physical surerings have been said to be the key to his poetry; there is a feminine note in it and a perverseness in his judgment. He is at his best in fugitive or solitary poems on deeply-emotional themes, such as sunset and a quiet passing like the peetry of John Davidson and John Masefield, the poetry of H is notable for clear out actuality and subordination for clear cut actuality and subordination for clear cut actuality and subordination of beauty for its own sake to the effect of power. He followed Kipling in the swashbuckling vein, and threw himself with a strange zest into the then new fashion of belauding Colonial adventure regardless of Christian traditions. In his iyrios, however, he revealed a genuine if not always original force. His best work is his London Voluntaries (1893), poems unconventional but stimulating and chalunconventional but still matting and charlenging. His collected works were pub. in 1908 and 1921 See L. C. Cornford, William Ernest Henley, 1913, k. V. Lucas, The Colums and their Friends, 1928; K. Williamson, W. E. Henley: a Memoir, 1930; J. Connell, W. E. Henley,

Henns, substance made from the leaves Henna, substance made from one serves of Lawsonia inermis, the Egyptian privet or henna-plant, and is much used in the E for staining nails, finger tips, etc., and by men for dyeing their beards, the colour produced being a roddish orange. Its use has prevailed from very early times. To-day it is used by women for drawing hair. dyeing hair

Hennebont, tn. of Morbihan, France; on R. Blavet, 6 m. N E. of Lorient. Much of the tn. is very old. It is now a busy port, and has boat-building, tunning, and distilling industries. The tn. suffered considerable damage in the Second World

considerable damage in the Second World War. Pop \$100

Henner, Jean Jacques (1832-1905), Fr painter, b at Bornwiller educated under Drolling and Picot In 1858 he obtained the Grand Prix de Rome His most notable work is seen in his nude figure-studies Among his pictures are: The Chasto Susanna' (1865), in the Luxembourg. 'Biblis (hangée en Source' (1867), at Dijon, 'The Good Samaritan' (1871), in the Luxembourg. 'Nalades' (1875), in the Luxembourg. 'Nalades' (1875), in the Luxembourg. 'The Dead Christ' (1876) 'St John Baptist', 'The Extening' (1877), 'The Magdalene' (1878), 'The Levito I phraim' (1898), 'The Draam' (1900)



HENRILTTA MARIA

Henrietta Maria (1609-69), Queen of Charles I of England, daughter of Henry IV of France. When the first overtures William Ernest Henley, 1913, E. V. IV of France. When the first overtures tucas, The Colums and their Friends, 1928; K. Williamson, W. E. Henley: a Memotr, 1930; J. Connell, W. E. Henley: a Charles, she was not much more than four-theory teen. Consent was given to the marriage on condition that the Eng. Rom. Catholics Henley-on-Thames, tn. of Oxfordshire, were relieved from the operation of the England, on R. Thames, 36 m. W. of penal laws. She married by proxy and London. A favourite summer resort and had already pledged her husband to a

probably by poison.

Henry, practical unit of electric self-inductance. It was defined by the International (ongress of 1908 as the induction in a circuit when an electro-motive force induced in this circuit is one international ... It, while the inducing current varies at the rate of one unperc per sec.' It derives its name from that of the

discoverer of the proporty of inductance, Joseph Henry (1797–1878).

Henry I. (1068–1135), king of England, the youngest son of Wm. the Conqueror and it is to be noted the only son born to Wm. after he became king. This is of Wm. after he became king. This is of importance, since H. made this fact one of his chief claims to the throne of England of his chief claims to the throne of England against the claim of his cliest brother Robert. During the war between Rufus and Robert of Normandy, H. supported the claims of Robert, but, in the treaty which followed, his claim to the Eng. throne was utterly disregarded. On the death of Rufus, however, and whilst Robert was hastening back from the Holy Lead, he selzed the crown of England (1100), and was elected by the witan. The early part of his right was taken up with struggles with Robert. These struggles ended in a compromise by which Robert was to receive an ann. pension. Robert, however, again went to war and was overwhelmed at Tenchebrai (1105). This battle has been called the Eng. This battle has been called the Eng. revenge for Hastings. Robert remained death in 1133. The struggle in Normandy was continued by Robert's son, who found much support at the hands of the Fr. king. Ultimately, H. was entirely successful. He had done much to commence the amalgamation of Norman and Saxon into a united Eng. race, and although his mar-riage with the Saxon princess, Matilda, was scornfully regarded by the Norman nobles, it was an example which was fol-lowed later by many Normans. In Engnobles, it was an example which was followed later by many Normans. In England itself H. had issued a charter on the part of his reign was spent in France in struggles with the king of France and with Confessor, and had restored law and order his own subjects. He probably regarded

course of action which would bring unpopularity upon him as well as upon herself. The early years of the marriage were unhappy, Charles breaking his promise to relieve the Eng. Catholics. After the assassination of liuckingham, the barrier between the married puir was broken, and the bond of affection that united them never loosened. In 1644 the queen left her husband, to see him no more, being exiled in France on account of religious and political difficulties in England. Her husband's execution in 1649 was a terrible blow to her. When, after he lestoration, she returned to Eugland, See R. W. Church, Saint Anselm, 1870; T. Arnold's ed. of 'Henry of Huntingdon,' Itsioria Anglorum (Rells series), 1879; Conquest (vol. v.), 1867-79; W. Stubbs, The Constitutional History of England (vol. i.), 1894-78; Kate Norgate, England under the Angecia Kings (vol. i.), 1887; The Ramsay, Foundations of England vol. ii.), probably by poison.

Henry II. (q.v.) had ther begins for the forms of Henry II. (q.v.) had their begins of them raining in H. 1119 his only son, ing in It 1119 his only son, in It 1119 his only son, ing in It It 11, ing ing ing 1927.

Henry II. (1133-89), king of England. He was the eldest son of Matilda and deoffrey of Anjou, and was b. in 1133. On the death of his grandfather, Henry I., his mother was passed over in the Eng. succession and Stephen succeeded. Before it, had attained his majority he had proved himself a great warrior, and was the possessor of wide dominions in France. He ruled Normandy, Maine, Anjou, and Touraine, whilst by his marriage to kleanor of Aquitaine, the divorced wife of the king of France, he succeeded to her dower as well. He landed in England in 1153, and by the treaty of Wallingford it was agreed that he should succeed Stephen as king of England. He was crowned in 1154, and immediately began to establish urmly the royal power. The 'nineteen long winters' had left the nobility practually omnipotent in England, and H.'s irst task was to crush the baronial power. This he did by turning the mercenaries out of the country, by demolishing all castles Geoffrey of Anjou, and was b, in 1133. On This he did by turning the mercenaries out of the country, by demolishing all eastles erected without licence, and reverting to the crown all grants of land made during stephen's reign. Having crushed the barons' power, he turneds his attention to the church. The power of the church was admittedly great, but the church was by no means inclined to give up that power. He appointed his chancellor, Becket, archbishop of Canterbury, but Becket proved as obstinate an archbishop as he had been subservient as chancellor. The Constitutions of Clarendon placed the royal and the church courts on an equal basis, but liceket ultimately refused to acknowledge them, and in denance of them appealed to them, and in defiance of them appealed to the pope and fied the country. This utdinately lod, after a pretended recon-ciliation, to his murder (1170). In 1174 H. did public penance at the tomb of Becket.

England as the least important of all his dominions. During his reign, also, attention had been turned to Ireland, where Stronghow had succeeded in establishing Norman power. II. went over to Ireland, reduced the Norman nobility to subjection to himself, and ultimately appointed his youngest son John lord of Ireland. In France, in addition to struggling against France, in addition to struggling against the Fr. king, he had also considerable trouble from hissons, Henry, Richard, and Geoffrey. Both Henry and Geoffrey died before their father, but the final struggle which broke H.'s power was against the king of France and Richard. H. was defeated, humiliated, and forced to agree to terms. He agreed that a general amnesty should be greated to the coholium such as the coholium such as the second to the coholium such as the coholium such as the second to the coholium such as t should be granted to his rebellious subjects. Weak and ill almost to death, he the first name which a list of the rebels; the first name which he saw was that of his best-loved son John, and with the words 'Shaine on a conquered king' he turned his face to the wall and died. His reign in England has been described as a reign of law and order, and certainly the system estab, by H. worked exceedingly well and was of vast un ortance in the building of the constitution of England. He was the greatest of the Plantagenets, and it is to be noticed that in order succossfully to oppose and lessen the power of church and nobility, he enlisted popular support by wise and enlightened measures of reform, and by the Asize of Arms he raised a militia on win h he could always depend. He was an able gen., a wise, if unprincipled, state-man, and a great legislator. See the records of the various chroniclers, such as Wm of Newvatious chroniclers, such as Wm of Newburgh's (or Newburg), Histona Rerum Anglicarum (Hist. of Eng. affairs), Ciraldus Cambrensis (Gorald de Barri) and others (Rolls series); Stubb's Constitutional History; R. W. Eyton, Itinerary of Henry II, 1878; Mrs. J. R. Green (Alice Stopford), Henry II., 1888; W. Maitland, History of English Law, 1898; Kato Norgate, England under the Angevin Kings, 1887; Sir J. H. Ramsay, Angeron Empire, 1903, F. Hardegen, Imperialpolitik Heinrichs II. ion England, 1905; and the life by L. F. Salzmann, 1905; and the life by L. F. Salamann, 1919.

Henry III. (1207-72), king of England, older son of John. At the age of mine he succeeded to his father's throne, at a period when the struggle for the maintenance of the Charter was at its height. So far had the opposition to his father gone that Louis of France had been invited to accept the allegiance which many of the Eng havens had refused to John. We the Eng. barons had refused to John. By the judicious measures of the regent Pem-broke, of Hubert de Burgh, and Stephen Langton, H. was generally received as king and Louis was compelled to leave the

the papacy, a measure for which his father was responsible for, but of which H. suffered the results. His numerous relations, or the foreign favourites as they were generally termed, were another cause of trouble to H., and caused much ill-feeling throughout the country. His early war with France, which was fought from a mis-taken conception of the ideals of the Eug., ended in disaster, and would have had even more disastrous effects had it not been for the genero-ity of St. Louis. His continued misrule, his attempted extor-tions of money, the vast influence of the papers over the kingdom, and his numerous grants to his favourites, maily united the Eng. as a race against him. Matters came to a head when H. fin illy demanded a huge sum of money to purchase for his son Edmund support to obtain the kingdoin of Sielly granted him by the pope By the Provisions of Oxford his power was relegated to a committee of barons, led by Simon de Montfort, a former favourite and a brother in-law, but now a much-hated rival. In 1263 the Provisions of Oxford were placed under the arbitration of Louis of France, who decided in favour of II., and war numediately broke out The party of Simon de Monifort over the party of Sinton de Montort over whelmed the king at Lewes and for a time the gov. passed into their hands. In 1265 Simon summoned his famous parlia ment, the forerunner of our modern repre sentative parliaments, but in the same year be was overcome and killed at kye sham by Prince Edward. The Montfortian party held power for a time, but finally terms were laid down by the Dickers of Lendworth. However, the of Kenilworth. Hencelorth troubles of the reign ceased, so much so that Edward was able to depart on cru-sade, and it, died peacefully at West-innster. It is important to notice that so minuter. It is important to notice that so thoroughly had affairs been settled that kalward succeeded peacefully to a king-dom to which be did not return until two years after his father's death. See Shirley (ed.) Collection of Itoyal and other Historical Letters (Rolls series, 1862-66); W. Stubbs, Constitutional History of Eng-land (vol. ii.), 1887; H. W. C. Davis, Ingland under the Normans and Angerus. rmana under the Normans and Ingerias, 1905: Sir J. H. Ramsov, Pawn of the Constitution, 1908; Kate Norgato, Minor-ily of Henry 111, 1912: M. Hennings, Ingland under Henry 111, 1924; E. Jacob, Studies in the Period of Baronial Edwar, 1995 Reform, 1925.

Henry IV. (1367-1413), king of England, first of the Plantagenet house of Lancaster to ascend the throne. His accession was in reality the vital cause of the later Wars of the Roses. He was the son of John of Gaunt, the fourth son of Fdward III. He was known in early life as Henry of Bolingbjoke, the title being taken from the place of his birth. He supported Higher II leasting the concepts have and Louis was compelled to leave the country. On the death of Pembroke (1219), Hubert de Burgh ruled for H and adopted a distinctive and national policy. In 1227, however, H. declared lunedly of age. In 1232 be deprived Hubert de Burgh of all his offices, and finally began the period of personal gov. in 1231. His policy was defined at Ravenspur and present of the surrender of the kingdom to own. Finally, he forced Richard, deserted

and betrayed, to abdicate, and was him-self proclaimed king as Henry IV. (1399). 1914-19: R. B. Mowat, Henry V., 1920; He based his claim essentially upon its parl, character. Richard died at Ponte-fract four months later. His reign is char-acteristic chiefly for the lawlessness and rebellion which pervaded it, and for the impetus which his recession to the throne of Prance. He was less than twelve months reactive to the lawlessness and rebellion which pervaded it, and for the impetus which his accession to the throne gave to parliament. The Welsh rebelled under Owen Glendower (Glyndwr); the Scots were attacked, but the attack failed, and reliable the Section (Straight Straight Stra and when the Scott invaded England, they were beaten by the Percies at Homildon Hill (1102). Irritated by the king's be-Hill (1102). Irritated by the king's behaviour, the Precies now rebelled, and attempted to form a junction with the Welsh under Owen Glendower: they were, however, defeated at Shrewsbury (1403). After this the power of the Welsh rebellion began to die out, but Wales can be said to have been practically independent of England's authority during the greater part of this relgn. Prince James of Scotland was captured and kept a prisoner in England, and H. attempted some attacks. England, and H. attempted some attacks in France. His religious policy was strongly in favour of the church, and he commenced a rigorous persecution of the Lollards. Towards the end of his reign he was a chronic invalid and suffered from a particularly painful and, according to some authorities, loathrome disease. He died at Westa 'y ter. He was a capable and clever man, but towards the end of his and elever man, but towards the end of birreign degenerated into a suspicious and cruel tyrant. See J. Gairdner, Houses of Lancaster and York, 1874; J. H. Wylie, History of England under Henry IV.. 1884-98; Sir J. H. Rainsay, Lancaster and York, 1892; C. W. C. Oman, The Political History of England (vol. iv.). 1892; J. H. Flemming, England under the Lancastrians, 1921.

Henry V. (1587-1122), king of England, eldest son of Henry IV., was created Prince of Wales in 1399. His youth was occupied in constant warfare, and many wild and probably exaggerated stories are told of him. That he disagreed with the

the Lancastrum dynasty on his accession. The Percies were restored to favour, Richard's body was interred in West-Hondly, he drove Warwick and unstream hand any attempts at down with a irrn hand any attempts at rebellion. The vear after his accession he claimed the throne of France by right was again king. But Edward IV was forced to fice the country and for a short time H. Warwick and many across to France. Success (1170) the notable battle of Agincourt (1415) and to reduce A. France. Finally came the treaty of Troyes (1420), by which H. married the Fr. king's daughter and was acknowledged as heir to the Fr. throne. Whilst he was in England attending the ceronation of his queen, the Eng. forces met with some reverses. H. thereupon returned to France, but died there in Aug. A just, plous and conscientious ruler, he was without pity, and was a great persecutor of the Lollards. See works cited was demended from that Owen Tudor under Henry IV; also C. L. Kingsford, Henry V.: The Typical Mediaeral Here. the notable buttle of Agincourt (1415) and

France. He was less than twelve months old when he succeeded to the realm of England, and shortly afterwards, by the death of his grandfather Charles VI. of France, he became king of France. His ters. were administered for him by his uncles Bedford and Gloucester. At first the attempt of the Fr. dauphin (Charles VII.) to obtain possession of his father's brone was in vain, but after the appearance of the Maid of France (Jeanne d'Arc), the Eng. becam gradually to lose their Fr. the Eng. began gradually to lose their Fr. 1135 was really the final blow to the Eng. n Eng. hands. In 1447 Gloucoster, after having been arrested by the queen's party, was found dead a few days later. The queen (Margaret of Anjou) now became the real leader of the policy of the court; her husband, plous, learned, and amiable, the translation of the policy of the court. was entirely under her influence, and untortunately events were moving rapidly in England towards a climax. The loss m kngland towards a climax. The loss of the Fr. possessions, the return of the soldiors from France, and the resulting memployment problem which followed, all conspired to make the Lancastrian dynasty unpopular. Nor did the influence of the queen have any better result. In 1454 H. became insone, and Richard, duke of york, a nearer lineal descendant of Edward III. than H., became protector, II. recovered; York was deprived of his office, and it became obvious that of his office, and it became obvious that war was at hand. The year 1455 saw the battle of St. Albans, and from that date until 1471 battles between Yorkists and Lancastrians were frequent. Wakefield (1160) delivered York into the hands of Margaret, by whom he was beheaded, but Towton (1461) placed Edward, earl of March, son of Richard of York, securely on the throne. The power behind the

nected with the royal line, and through his | ably supported by Cardinal Wolsey, but mother was descended from the Beauforts, | it must be remembered that II. was always the descendants of John of Gaunt and Catherine Swinford. He naturally supported the claims of the Lancastrians during the wars of the Roses, and finally put a period to these wars at the battle of Bosworth (1485), where he overthrew Richard III. and was acclaimed king on the battlefield. He was the founder of the Tudor dynasty, and practically estab. a system of absolute monarchy. By his marriage with Elizabeth of York he united the two houses of York and Lancaster, and by his overthrow of Simnel and Warbeck, the pretenders, he finally estab. his line armly on the throne of England. His influence on the Continent was much greater fluence on the Continent was much greater than that of any previous Eng. kiug, and his adoption of a national policy gave England a great position amongst the nations of Europe. The policy of royal marriages which he initiated was of vast importance when judged by its later results. The marriage of his son Henry with Catherine of Aragon, after she had first wedded the elder son Arthur, was a primary cause of the separation from primary cause of the separation from Rome, whilst the marriage of his daughter with James IV. of Scotland led to the ultimate amalgamation of the crowns of England and Scotland. He adopted a policy of peace, he estab, sound com-mercial relations with the Continent, and mercial relations with the Continent, and he realised that whilst the nobility must be crushed, the people must be supported. This peace policy had wide effects upon the later hist, of England. When H. died he left a huge fortune (about £30,000,000) to his son Henry VIII. He was an austere, somewhat misorly king, but nevertheless a king who placed England on a sequence and figure begis than heretonevertheless a king who placed England on a securer and firmer basis than heretofore. See J. R. Lumby (ed.), Francis Bacon's Life of Henry 1 II.; also J. Galrdner, Henry the Secenth. 1889; W. Busch, England under the Tudors (vol. 1, King Henry VII.) (trans.) 1895; A. F. Pollard, The Weign of Henry VII. from contemporary sources, 1913-14; Gladys Tempertey, Henry VII., 1914; W. D. Bushell, The Lady Margaret Beaufort and Henry VII., 1916; C. H. Williams, Henry VII., 1937. 1937.

Henry VIII. (1491-1517), King of England, being the second son of Henry VII. and Elizabeth of York. Until the death of his elder brother Arthur be was educated for the church. He succeeded his father and married Arthur's widow, Catherine of Aragon, in 1509. This marcatherine of Aragon, in 1909. This marriage seems to have caused H. no scruplos at the time. When he succeeded he was one of the most popular kings that England had ever had. He was young, handsome, tall, well built of a jovial disposition, and free and easy with his subjects. No king ever had better prospects when he accorded that throug His retar falls king ever had better prospects when he ascended the throne. His reign falls naturally into two parts, separated by the date 1528, which may be regarded as the critical year of the divorce. The early period was occupied in affairs at home, in promoting the commercial relations of the country, and in maintaining the balance of power in Europe. In all this he was

the leading spirit. The aims of the king, of the cardinal, and of the nation conspired at this time to make the foreign policy popular and national. A life-long policy popular and national. A life-long rivalry had begun between Francis I. of France and Charles V. of Spain. Wolsey profited from their mutual hostility by making England the arbiter between them, and both kings sought the favour of H., Francis at the Field of the (loth of Gold, and Charles in a less ostentatious manner.



HENRY VIII.

in Kent. In 1525, however, Francis was defeated at Pavin. By 1521 II. had grown tired of his wife, he pretended to have scruples as to the legality of the marriage. He had already through Wolsey, incurred the displeasure of parlia-ment by his increasing demands for money, now he heally determined upon the step which was to alienate Rome, to separate the Churches, and in reality, though probably unconsciously, to complete the subjugation of the powers of the country to the crown. Yet previously, from his dislike of Protestantism, he had from his dislike of Protestantism, he had been prepared for peace with Rome, but on his own terms; and his defence of the Papacy against Luther, in 1521, had won him the historic title 'defender of the faith.' By 1528 the matter had advanced to an absolute demand for a divorce. From the point of view of H. there were many reasons for this step. He wanted an hier to the throne—so far Mary alone of his children had surrived: he desired an heir to the throng—so far Mary alone of his children had survived; he desired to marry Anne Boleyn, and he alleged that his marriage had been without the sanction of God. For a time Pope Clement VII. was inclined to concede the demand, and in 1528 Cardinal Campeggio was sent to England, with ample powers. The trial ended without decision, and the crowned the year before his death, and immediate result was the recall of Cambridge and the overthrow of Wolsey. His simply a feudal magnate and regarded immediate result was the recall of Campegio and the overthrow of Wolsey. H.'s failure had, however, only increased the keenness of his desire. Since the papacy would not humour him, he would obtain a divorce in his own courts, and in his own way. In 1531 the recalcitrant clergy were outlawed, and, step by step, and, by means of what is somewhat incorrectly termed the Reformation Parliament, he proceeded until he was acknowledged as head of the church, and the power of the bishop of Rome was declared at an end. But the way had been paved with blood, and Bishop Fisher and Sir Thomas More had paid the penalty of loyalty to principle. It must be definitely understood, however, that H. wished to be strictly orthodox. Illis idea was not the reformation of a religion, but of a religious system; his motives may have been bad, but they motives may have been bad, but they were of vast importance to the nation at large. The Lutherans were far from encouraged, the Whip with Six Thongs (The Six Acts) imposed orthodoxy of the strictest type. The persecutions of Cromwell and the subservience of Granner made the path of H. fairly smooth. The monasteries, the most influential centres of allegiance to the papacy, were abolished (1538-39), those lands configered and of allegiance to the papacy, were about hed (1536-39), their lands confiscated and granted to a new noblity. The pilgrimage of Grace was crushed with metaless severity 9.1 the king became absolutely supreme. H. had, by this time married Anne Boleyn and executed her, by her he had the Princess Elizabeth His next wife, Jane Seymour, here him Prince Edward and died. Anne of Cleves followed: H. was, distributed. followed; If. was displeased with her, and the marriage was immediately disand the marriage was immediately dis-solved; the immediate result was the execution of Cronwell. H. next married Catherine Howard, who was executed for infidelity, and finally Catherine Parr, who nursed him and managed to survive him. During the latter part of the reign the Reformed religion had made some progress with little or ne encouragement. progress with little or no encouragement from H. The later years of the reign were, however, marked by cruelties and bloodshed beyond measure, and H. died finally with the reputation of a bloody finally with the reputation of a bloody tyrant. The facts of Henry VIII.'s life are to be found in the Letters and Papers of the Reign of Henry VIII. 21 vols. ed. by S. J. Brower and J. Gaitdner. 1910. See also J. Froude. History of England. 1856-69; M. Cheighton, Wolsey, 1888; F. A. Gasquet, Dissolution of the English Monasteries (trans.) 1889; A. F. Pollard, Henry VIII., 1905; and M. Hume, Wiresof Henry VIII., 1905; C. Coustant, La Réforme en Anglelerie, 1930; II. Savago (ed.), The Lore Letters of Henry VIII., 1949.

only as primus interpares.

Henry II. (1519-59), King of France, in 1533 married Catherine de' Medici. He succeeded his father, Francis I. The influence of the family of Guise led to the interference of France in Scotland, and to have with England. This was registed to war with England. This war resulted in the capture of Calais, which had for over two centuries been in the possession of England. This reign witnessed much



HENRY III. OF FRANCL

oppression of the Protestants, but nevertheless H. supported the reformers against the emperor with some degree of success, the emperor with some degree of success, but was overthrown in the Sp. Netherlands by Alva. The treaty of Cateau-Cambrésis concluded the war with the empire and Spain. He was slain at a tournament by a Scottish nobleman. See I. de la Barre-Dupatre, Histoire de Henri II., 1887; L. Romier, Les Origines politiques des guerres de réligion, 1913-14, and Le Royaume de Cutherre de Médicis, 1929 1922

Henry III. (1551-89). King of France, the last of the Valois, was the third son of Henry II. and Catherine de' Mcdici. He fought against the Protestants at Jamao and Moncontour. He played a great part in the massacre of St. Bartholomew, and after being elected king of Poland, succeeded to the Fr. throne on the death of his brother Charles IX. (1574). (ed.), The Lore Letters of Henry VIII., death of his brother Charles IX. (1574). Buring his reign almost constant wars took place between the Catholics and the Protection 1031, son of King Robert and grandson of Hugh Capet. The early years of his reign were spent in lighting the fendal nobles, who supported the claims of his was at times violently anti-Protestant. He was assasinated on Aug. I by a friar younger brother Robert. When this dispute was settled he turned his attention to Normany, where he attacked Wm. the Bestard without success. His son was

Froer, Henry III., 1858; P. Robiquet, Paris et la Lique sous Henri III., 1887. Henry IV. (1853-1610), king of France and Navarre, b. in the castle of Pau, the son of Antoine de Bourbon, and Jeanne son of Antoine de Bouron, and Jeanne D'Albret, the heiress of Navarre. He was educated as a Calvinist, and after 1569 was recognised as the Huguenot leader of France. He fought at Jarnac, and led the Protestants in the religious wars which were rife in France at this time. In 1572 he married Margaret de Valois, the sister of the king of France, but within a week followed the massacre of St. Bartholomew, after which Hermajned mactically a street which Hermajned mactically a after which H. remained practically a prisoner in the hands of the Fr. court. He finally renounced his religion and later escaped to Alencon, where he repudiated that renunciation and again put himself at the head of the Protestants. Henry III. depended upon him for support, and on the death of that monarch, II, of Navarro the death of that monarch, 11, of Navarro became nominally the king of France. His Protestantism made him repugnant to the majority of his subjects, and the Catholic League, strengthened by support from outside, especially from Spain, was strong enough to force him to the S. There he remained for some time until his renunciation of Protestantism and his entrance into the Catholic Church entrance into entrance into the Catholic Church secured for him the allegiance of the vast majority of his subjects. The peace of Vervins ended the war with Spain, and II. was at last free to turn to the internal aftairs of the country. He, together with his minister, Sully, referred the finances of the country, centralised the gov.. and above all reduced the power of the nobles. Commerce and trade received a great impetus, and the national debt was largely reduced. Just after the coronation of the second queen, and while he was on the point of setting out to war in Germany, he was assassinated by a religious fauntic. Ho was essentially a patriot king, and worked throughout for the good of his country. Paris, he said, was worth a worked throughout for the good of macountry. 'Paris,' he said. 'was worth a Mass.' He had many mistresses, and his immoral life was the worst side of his character. See besides the hists, of France, the Momoirs of Sully and others; calso M. W. Ercer, Henry 11, 1858; E. De La Barre-Duparq, History de Henry 1V., 1881; L. Rambault, Henry 1V. et sur over, 1884; H. M. Evand, The Huguenots and Henry of Narane, 1886; P. de Valsslete, Henri 1V., 1930; M. Saint-René Taillandier, Henri 11, 1938; R. Ritter, Henri IV., te Harnus, 1945. M. Bourrier (ed.), Henri 1V., pual par hulmene, 1947.

Henry V. of France, see Chambord, Comte de.

Henry II. (1333-70), king of Castile, surnamed 'El Bastardo,' was an illegitimate son of King Alphonso the Avenger. He led repeated rebellions against l'edro the Crael, and was supported by the Fr. the Creet, and was supported by the Fr. leader Bertrand du Gueselin. In spite of the opposition of the Eng. under the Black Prince, he was able to establish himself in 1869. He then led an army against Portugal. His reign was conducted more on lines of defence then agressiveness.

Henry III. (1379-1406), king of Castile, surnamed 'The Sickly.' It's succeeded his father at the age of eleven, and the period of the regency was somewhat disturbed. He was able, however, to assort his power, and under his personal rule the kingdom prospered. He married in 1393 Catherine of Lancaster. During his reign the Canary 1s. were taken possession of by Castile.

Henry I. (876-936), surnamed the Fowler, king, but not emperor, of Germany, the son of Otto, duke of Saxony, succeeded (919) to these dominions on the death of his father. He was strong enough to resist the attacks of the emperor, and to reser the attacks of the emperor, and built up in Germany a strong and con-solidated state, which contained Lorraine, and which held Hungary in check. He instituted now methods of attack in war-fare, and built large cities throughout Saxony and Thuringia. He was on the point of claiming the imperial throne when he died. The value of his work towardthe building up of Germany was very great indeed. See R. Hollzmann, Ge-schn'ite der sechsischen Kaiser-eit, 1941.

Henry II. (973-1021), Ger. emperor, the son of the duke of Bayaria and the grand-son of Henry the Fowler. He was of considerable service to the Emperor, Otto III., whom, as the last representative of the saxon house, he succeeded in 1992. He had many revolts to contend against, but he secured Lombardy to himself, defeated the Poles, obtained the promise of the incorporation of Burgundy with the empire, drove back the GRs, in Italy with the help of the Normans, and greatly in-creased the power of the church. This latter side of his policy was of vast im-portance, since he raised up the power of the church in order to balance the power of the nobility. He was one of the greatest patrons which the church has ever had, and was canonised after his death. See hie by H. Gunser, 1901, and R. Holtzmann, Geschichte der suchsischen Kuiserzeit, 1941.

Henry III. (1017-56), Gcr. emperor, son son of Conrad II. He was successively king of the Gers., duke of Bayaria, and duke of Swabia, and finally became om-pero in 1939. He restored and kept up the peropative of the empire, and en-couraged the movement towards the reform of the courch. He deposed the three ival popes, and placed Clement II, on the papal throne. He forced the duke of Bohemia to acknowledge himself a vassal of the empire, and practically placed Hungary under the allegiance of the emperors. He encouraged art, archi-tecture, and learning. One of his greatest achievements was the estab, of supremacy over the Normans in Italy. See monographs by E. Steindorff, 1874-81 and P. Kehr, 1930.

Henry IV. (1050-1106) Ger. emperor, son of Henry III., and succeeded his father at the age of sig. His mother, the Empress Agnes, at list acted as regent, but her rule was too week, and at the age of twolve the emperor fell into the hands of Anno, archibishop of Koin, by whom he was educated. The position of Auno was

over H. The constant changing of his tutors, and the weakness of his training due to the constant rivalry of his regents, led to excesses on the part of the young emperor. He was not, however, without ability. He was declared of ago in 1065, but his troubles began with the rebellion but his troubles began with the recollion of Otto duke of Havaria, whom he was able finally to crush. The princes of the empire, however, gave him little or no support. The next great trouble of the reign was the quarrel with the papacy. known as the investiture dispute. The papacy under Gregory VII. (Hildebrand) was endeavouring to raise the moral tone of the clercy by securing the abolition of law investiture, is the amointment of the lay investiture i.e. the appointment of the higher elergy by the civil authority. Though previous emperors had supported the papal claims, II. now entered the lists as the champion of the civil power. His first step was to demand that Gregory should excommunicate his enemies. reply the pope insisted on H. considering various charges brought against him by his subjects. H. called a council of prelates and announced Gregory deposed. Gregory issued sentence of excommunication against H. H.'s supporters quickly fell away, and he saw that his only hope of success lay in surrender to the papacy. He sought out the pope at (anosat, and there, after willing for three days in the shirt of a penitent, amidst the snows of the Aponumes, he was admitted to the prosence and forgiven. The princes of the empire were still dissatisfied. Three the empire were still disastisted. Three anti-emperors were raised up in succession, and although H. won some successes, even his sons were induced to rebel against their father. The papacy also still continued its policy of opposition to the emperor, and although H. was successful in maintaining a pope of his own choice in Hone, he was forced finally to abdicate, and he fled from prison to Liège. Here head of the Welf family. He was necessful in the head of Saxony and Bavoria, His beauting another attack on the Carlon of them by Predictive Barbaross. He encouraged he was restored to some of them by Predictive Barbaross. He encouraged he was restored to some of them by Predictive and the pope when he died. In ports on the Battic, and founded the prover become in termany that a league power become in termany that a league king, H. was in reality, nothing of the kind. His work was of vast importance. He of princes was formed against him, but realised that the power of the papacy had this had so little effect that he was finally increased, and must, for the safety of the placed under the ban of the empire (1180), empire, be diminished, and he cought also the was reconciled, however, to the Emto crush the power of the secular nobles peror Henry VI. See lives by A. L. and centralise the gov. as far as possible.

See monographs by H. Flote, 1855-57;
W. Gleschrecht, 1863; G. Meyer von
Kronan, 1890-1904; and B. Schneidlet,

1927.

rights of succession because of his rebellion 1 ornembered for the services which he against his father, but H. was guilty of rendered to geographical discovery. His the deepest treachery. When he successful to geographical discovery. His the deepest treachery. When he successful the successful the papacy previously, he 1s. were discovered. He and his saliers would resign even such concessions as his now explored many points on the coast of father had been able to win. After many Africa. He estab a school for navigation struggles with the popes H. was able to and an observatory. During his lifetime obtain a settlement of the whole investid discoveries were pushed on apace; his inture (q.c.) question by the Diet of fluence on the age which fellowed earnot be Worms, which was concluded in 1122. exaggerated. See J. P. Olivaira Martins,

rivalled by that of Adalbert, the arch- By this the papacy kept the right of bishop of Bremen, who had great influence | election and consecration, but the church lands were invested by the emperor or his representative. He was the last of the Franconian dynasty. See monographs by F. W. Glesebrecht, 1890, and H. Benniza, 1927.

Henry VI. (1165-97), Ger. emperor, was the son of the Emperor Frederick Bar-barosa. He was made king of Germany during his early childhood (1169), and succeeded to the empire (1190) on the death of his father whilst leading the cruical death of his father whilst leading the his father whilst leadin the power of his dynasty. He crushed the rebellions in Sigily, and overawed the whole empire. He even for a time forced the emperor of the E. empire to do him homage. His Sicilian campaigns form the object of greatest interest in his reign, and he was able to raise a tine army from the he was able to raise a tine army from the ranson which he obtained from Richard I. of England. His attempts to establish his dynasty on the imperial throne falled principally because of his early death. Set 11. Torche. Jahrbitcher, 1867; J. Haller, Heinruch IV. und die römtsche Kurn., 1914; E. Perels, Erbreichsplan Hunrichs VI., 1927.

Henry VII. (c. 1275-1313), Ger. emperor, was the son of Henry II., count of Luxemburg. Ho owed his election as emperor at Home in 1312 to the fact that there was no strong opposition, and that he was regarded as being unimportant. He engarded

garded as being unimportant. He en-riched his own family with the lands of Bohemia, and attempted to revive the old glories of the empire. He, however, made the error of supporting the princes against the growing power of the cities. Nee lives by K. Gräfe, 1911 and F. Schneider,

up ports on the Baltic, and founded the ta. of Munich, So great, however, did his power become in Germany that a league He was reconciled, however, to the Emperor Henry VI. See lives by A. L. Poole, 1912; M. Philippson, 1867, 1918; P. Bartels, 1923, and C. Hampo, Herischerustalin, 1927.

Henry the Navigator (1394-1460), fourth son of King Jose 1, of Portugal and Henry V. (1081-25), Ger. emperor, was the Eng. princess, Philippa, daughter of the second son of lionry IV. His elder John of Gaunt. He carly distinctished brother. Conrad, was deprived of his himself by his bravery, but he is best rights of succession because of his rebellion fromembered for the services which he

and thereafter James drifted rapidly away from France and became a close ally

of Spain.

Henry, Sir Edward (1850-1931), Brit. commissioner of police and criminologist. Studied for the Indian Civil Service and joined the N.W. Prov. Service. In 1891 ho was appointed Inspector-Gen. of Police, and thus began the work in which he won distinction. His name will always be associated with the perfecting of the to associated with the perfecting of the inger print wasten of identifying criminals, which system he learned in India. In 1901 H. was appointed Assistant-Com-missioner of Police in London, and in 1903 Commissioner, besides being head of the Criminal Investigation Department, holding these offices till 1918. To him more than any other man is due the efficiency of the modern C.I.D. He did much, too, to improve the status of the police, and inaugurated the Peel Training School,

inaugurated the Peel Training School, besides supporting the Police Orphanage, Henry Frederick, Prince of Wales, (1591-1612), eldest son of James I. He was hat Stirling Castle some years before the accession of his father to the throne of England. On his birth he was created duke of Rothesay, and in 1610 Prince of Wales. He died at the age of cighteen, when his career had already given great promise.

promise.

Henry, Joseph (1797-1878), Amer. scientist, b. in Albany, New York. He appears to have been the first to adopt insulated wire for the magnetic coil. He was the first to magnetise iron at a distance, and he was also the first to apply the telegraph to meteorological research. The unit, of electrical induction is named after him. From 1868 he was chosen annually as president of the National Academy of Sciences, and he was also president of the Philosophical Society of Washington from the date of its organisa-Washington from the date of its organisa-tion in 1871. He wrote Conditionions Electricity (1839) and Syllabus of Lectures in Physics (1844).

Henry, Matthew (1662–1711). Eng. Nonconformed divine, b. on the borders of

Flintshire and Shropshire, son of Philip H., who was ejected by the Act of Uniformity; he possessed private means, and educated his son well. The ton relinquished legal studies for theology, and in 1687 he became minister of a Presbyterian church at Chester. His well-known exposition of the O.T. and N.T. (1710) is a commentary of a practical and devotional rather than critical kind. Its racy Eng. style secured for it the foremost place among works of its kind.

Henry, O. (1862-1910), Amer. short-story writer, b. at Greensboro, N. ('arc-dins, U.S.A. After a brief schooling, ho worked in a drug store in his native tn. until ill-health compelled him to try life on a ranch in Texas. In 1884 he secured

The Golden Age of Prince Henry the Navigator, 1891 (trans. 1914).

Henry, Prince of Wales, eldest son of James I, of England by his wife, Anne of Jennark. He was a prince of great promise, who was the hope of those who disliked Spain. Unhappily he died in 1895 the young man, whose real name 1612 soon after the death of Robert Cecil, and thereafter James drifted rapidly the Navy death him a flysiking blook provides to the Houston Texas Post. Fate seemed to have death him a flysiking blook provides to have dealt him a finishing blow when, in 1896, he was arrested on the charge of embezzling some of the funds of the Austin bank. The episode was nover entirely cleared up. What is known is that in 1898 Porter was sentenced to flye years' imprisonment in the Ohio Penitentiary. This was reduced to three years by good behaviour. Within prison walls, now for the first time he began to settle down to the scious business of writing, drawing upon his knowledge of the queer people he had met in the S.W. His MSS, were sent out under the nom-de-plume of O. Henry. His first but stroke of luck came when the New 1 ork World gave him a contract to supply one short story per week, at a fee of 100 dollars each. It was only some years later that the general reading public learned that O. Henry was Porter, the man who had been in prison. Despite his rather intemperate habits, he pespite ma rather intemperate habits, he was a prodigious worker, and vol. after vol. of his short stories was issued, among them being Cabbages and Kings (1904). The Four Million (1905). The Heart of the West (1907). The Lowe of the City (1908). Many of his stories are marked by their humour, others by their tenderness for the lowly and the unfortunate. And all of the was a secretary of the contraction of th of them are notable for the surprising unexpectedness of their cadings. His kind of short story resembles that of his pre-decessors Mark Twain, Bret Harte, and Ambrose Pierce and after him in the same Annoose Fisher and are find the same tradition followed ling Lardner and Dannon Runyon. Ins collected works were pub. in 1917. See R. H. Davis and A. B. Maurice, The Caliph of Bagdad—Arabian Nights Flashes of the Life, Latters,

and Work of O. Henry, 1931; and life by W. W. Williams, 1936.

Henry, Patrick (1736-99), Amer. statesman and orator, b, at Studley in Virginia; the son of a well-educated Scotsman, his mother being of Welsh descent. A lawyer he was brilliantly successful. 1765 he became a member of the Virginian House of Burgesses, and led the political agitation which caused the revolution. Beclared Stamp Act illegal, 1765; a member of the Continental Congress, 1774; Virginia Convention, 1775; Ratifying Convention, 1785; Governor of Virginia, 1776-79 and 1784-86. Known as the greatest speaker of his generation, perhaps his fluest certion was that rade perhaps his finest cration was that made in 1765, when the Virginian legislature was protesting against the obnoxious Stamp Act foisted on the Amer. Colonies by King George III, and his Cabinet. H. declared that the people of the Colony had all the rights of natural-born subjects of England and were bound to obey no laws except those of their own making. Then he continued in a famous passage: *Cæsar had his Brutus, Charles I. his

Cromwell, and George III ——''Tteason,' was shouted by the loyalists, George III' continued Herry, 'may profit by the txample If that is treason, make the most of it'

Henry, William (1775 1836), Fng chemist, son of an apothecary and writer B at Manchester, and began on chem to study medicine in 1795, took his doctor's degree in 1807, but ill health prevented him from practising, so he devoted his life to them. research, especially in regard to gases. His I lements of I r permental themistry (1799) enjoyed con siderable vogue, going through eleven

ds in thirty vers

ds in thirty vers

Henry of Huntingdon (c 1090-c.1150)

Ing chronicler His father by name
Nicholas was a clerk who beceme arch
deacon of Cambridge Hertford and
fluntingdon in the time of Remigns
bishop of Lincoln The cellbacy of the
clergy was not strictly enforced in lyne clergy was not strictly enforced in lang land till 1102 hence the chronicler makes no see it of his anticodents noi did they interfere with his cureer. The only is corded fact of the chronicles his is that he went with Archbishop Theobald to Rome in 1149. On the way H. halted at Bee, and there met Robert de Tougni who mentions the mention the mentions the men Bee, and there met Robert de Totegn who mentions their encounter in the preface to his chronicle. See I. Foresters trans. (1853) of H's Historia inglorum and I. Wriel to ed. of I piaramania in Inal. I.a. I.a. Poets, vol. ii, 1872. Honry the Minstral, see Harry Bit in Henryson, Robert (1428)—1001), Scottish poet. It is surmised that he was converted with the Cambra of Mendagon.

tish poet this surmised that he was connected with the family of Henderson of Forfell Hors described as 'Scholem uster of Dunfermeling,' probably of the grain mar school of the Benedictine above there is no record of his ever have studied at st Andrews, which was the studied at st Andrews, which was the only Scottish univ in existence at that tame his studies were therefore probable completed abreat. His longest work his Morall I abilits of I sope the Phayman (1770) he treated the subject with freshness Pfforts have been made, but in vain, to draw up a chronology of his poems See collected eds of his works by 1) Lanux, 1861, W. W. Metcalle and P. 1 Robb, 1917, and H. M. Wood, 1933.

Henschel, Isidor Georg (Sir George (1800-1934), Polish singer and composit be at Breslau and naturalised in 1 ngini

b at Breslau and naturalised in Inglant in 1890 Pupil of I ranz Gotze for singinand of Richter for theory, it Leipzi (1867-70), continued his studies in singin (1867-70), continued his studies in single and composition in Berlin He conducted symphony concerts at Bosto 1881-84, went to London, 1885, when he directed London Symphony Concerts till 1886. He was kinghted in 1911 after giving his last recital. He composed a number of instrumental works. Stabat Mater (Birmingham Festival), 1894, at 1 music for Hamlet, London, 1992, Operas A Sea Change, 1884; Frederick the hair and Nutha (Dresden), 1899. Wrote Personal Recollections of Brahms, (1907), and Musings and Musings and Informatical Recollections (1907), and Musings and Musings and Informatical Recollections (1907).

Bavaria; educated under the patronage of King Ludwig I at Weimar and Vienna He made his debut in 1837, and in 1838 went to St Petersburg, where he obtained an appointment at court and an inspector ship at the Imperial Educational Latab His work is small in quantity, but is dis tinguished by individuality. He himself tinguished by individuality. He himself was a most sympathetic and accomplished planist He wrote a planoforte concerto in F. minor, Poeme d'Amour, op 3. Bal lade, op 31, etc



ADOIT VON HINGELT

Henslowe, Philip (d 1016), Eng theatrical manager started his connection with the stage when in 1984 he tion with the stige when in 184 he lought land near what is now the send of southwark Bidge on which stood the little Rose Playhous. Afterwards he required other the trees and it was in these that many famous Elizabethan dramatists first had then plays produced see eds of his diary by 1 (offer, 1842, and W W Greg 194-0.

ind W W Greg 1904-0

Henson, Herbert Hensley (1863-1947), Fing bishop, b in London, fourth son of Phos. H, of Broadstairs. Lducated privately, and at Oxford Univ., where he was a fellow of All Souls' College from 1884 to 1891—re-elected 1896. He was head of Oxford House, Bethnal Green, 1887-88 vicar of Barking, kssex, 1888-99, in number of St. Mary's Hospital, Hford, 1891-1900; chaplain to the Bishop of St. Albans, 1897-1900, rector of St. Margurts, Westminster, and a canon of the Abbey, 1900-12 (sub dean, 1911-12), dean of Durham, 1912-18 He was proctor in Convocation in 1903 If a forcible and arresting method of stating his views changed little throughout his ministry, the News themselves changed and Name (Dresdons of Brahms, (1907), and Musings and Memories (his own reminis cances, 1918)

Henselt, Adolf von (1814–89), Gor musical composer, b. at Schwabach,

At Illord, though still defluitely a high churchman, he reduced the caro-monial he found. At St. Margaret's he be-came a broad churchman and a defen-der of Modernism. In 1907 he regarded Anglo-Catholicism as a spent force. He proposed to preach in a Birmingham Nonconformist chanel, in spite of the veto of the bishop, Dr. Gore. At this period he was an ardent champion of the Establishment, yet almost every sermon he preached in his later years included an eloquent demand for Disestablishment. His appointment in 1918 to the bishoprio of Hereford was strongly resented by the non-Protestant section of the church. had not only preached in nonconformist places of worship, but had in his writings commended a latitudinarian interpretation of Christian doctrine most unusual in an Anglican clorgyman: e.g. 'We want expurgated Bibles' (The Value of the Bible); and 'No doubt there is much in the primitive accounts of the Resurrection Bible); and 'No doubt there is much in the primitive accounts of the Resurrection which is demonstrably unhistorical' (ibid.). He was bishop of Durham from 1920 to 1939; Canon of Westminster Abbey, 1910-41. Gifford Lecturer, 1935. His pubs. include: Light and Leaven (1897), Apostolic Christianity (1898), Ad Rem, Thoughts on the Crisis in the Church (1900), English Religion in the 17th Century (1903), Religion in the Schools (1908), Christian Murriage (1907), Christ and the Nation (1908), Westminster Sermons (1910), Puritanism in England (1912), War-Time Sermons (1915), ('hristian Liberty (1918), Anglicanism (1921), In Defeace of the English Church (1923), Byron (Redo Lecture 1924), Notes on Spiritual Healing (1925), The Book and the Vote (1928), Disestablishment (1929), The Oxford Groups (1933), ('hristian Morality (1936), Ad Clerum (1937), The Church of England (1939), Last il ords in Westminster Abbey (1941), Reimpsect of an Unimportant Life (2 vols, 1912-13).

Henty, George Alfred (1832-1902), Enganthor, b. at Trumpington near Cambridge. But left without taking a degree. On the outbreak of the Crimean War he volunteered for active service, and his letters describing the siege of Sebustopol were pub. in

for active service, and his letters describing the siege of Sebastopol were pub. in the Morning Alvertiser. In 1365 he adopted the calling of a fournalet, and wrote for the Standard, going mon many famous expeditions. His first boy's book appeared in 1568, Out in the Pampas, and was followed by The Young France-Triers, a tale of the France-Prissian War (1872). He also tried his hand at novel writing, but without success, his great forte being tides of adventure for boys, of which he wrote about eighty.

Henzada, the of Burma, cape of the Helist. It is 66 m. W.N.W. of Pegu on the Irawaddy H. at the apex of the delta proper. Thus it forms a trade centre for the people of the delta and those of the for active service, and his letters describ-

proper. Thurst torms a trade centre for the people of the delta and those of the Lower Irawaddy Valley. It is here that the Rangoon line to Bassein crosses the frawaddy by rallway ferry. The dist. has an area of 28% eq. m. and a pop. of 550,860. Pop. (tn.) 23,600.

Hepatica, sometimes considered to be a Mepanoa, sometimes considered to us a separate goins of ranuaciacous plants, is more usually included in the genus Anemone. The species are herbs and sev. occur in Britain. A. Hepatica, the common H., has a donse involucre of green bracts which resemble a calyx, and the blue flowers are visited by bees for the honey they secrete. the honey they secrete.

Hepatic Calculi, see GALL-STONES.

Hepatic Calculi, see GALL-STONES.
Hepatitis, see under Liver.
Hepatis (Gk. ymaros, a fish, so named because of its being liver-coloured), name of a genus of malacostracan crustaceans belonging to the family Matutidæ; the species are found on the Amer. coast, where they bury themselves in sand. They are characterised by a generally convox carapace, trianglar frame, and claw-like endings to their legs.

Henburn, James, see Hornwell, Earl.

Hepburn, James, see Bornwell, Earl

Hephæstion ('Πφαιστιωι'), companion and friend of Alexander the Great, was the sour of Amyntor. He appears to have served with distinction at the hattic of Arbela, and was one of the veven select officers who were in close attendance upon the king's person. He was also com-mander of the horse guards (craîpo) for a time, and was entrusted with many importent commands during the campaigns in Bactra, etc., and the expedition to India.

He d. of a fever in 325 at Echatana. Hephæstus (Høneres), in Gk. mythology, the god of fire and of the arts which need the in their execution (equivalent to the Roman Vulcan). According to Homer he was the son of Zeus and Hera, and being a weakling from birth, was despised by his mother, who dropped him from Olympus into the sea. But he was rescued by Thotis and Eurynome, with whom he dwelt for nine years, busying himself by making a variety of ornaments, and amonest them the golden chair which he sent to his mother by way of revence. Having been brought back to Olympus by Dionysus, he was a second time hurled from the int., and this time by Zeus for championing his mother's cause. He settled for a time in Lemnos, but finally returned to Olympus and acted as mediator between his parents. All the masterpieces of metal which appear in the stories of gods and heroes, the legis of Zeus, the arms of Achilles, the sceptre of Agamemnon, the necklace of Harmonia, etc., were attributed to H., and his work-shops were placed on Mt. Olympus, and in various volcanie i-les where he received the help of the Cyclopes

Heppenheim, tn. in Hessen, Germany, 13 m. E. of Worms, is a health resort. It

13 m. E. of Worms, is a health resort. It dates from the time of the Roms, and contains the runs of Starkenburg Castle (1964), a former stronghold of the archbishops of Mainz. It has quarries, and manufactobacco and machinery. Pop. 8800, Hepplewhite, Georgie (J. 1786), Eng. furniture designer, who had a business in London at St. Giles, Cripplegate. His furniture in malogaby and satin-wood achieved a wide renown, especially his chairs which are made with a shield or heart-shaped back. His Cabinet-Maker

and Upholsterer's Guide was pub. in 1788. See K. W. Clouston, The Chippendole Period in English Furniture, 1897; R. Edwards, Heppleuchite Furniture Designs,

1948.

Heptane, name given to hydrocarbons of the paratiti series, consisting of 7 carbon atoms, chem. formula, C,H_{1s}. The two chief are (1) normal H., boiling point, 98-3, sp. gr. at 20° 0-683, contained in petroleum and in the tar-oil from cannel coal. Along with octane, it forms the chief part of the commercial petroleum ether. It is colourloss and has a faint agreeable odour. It recurs in the nut in the first of the commercial petroleum which a resin is obtained which, distilled with sulphurle acid, yields pure hydrocarlom. (n) methylethylpropylmothane—the simplest paratin with an asymmetric carbon atom, formed by the action of zine cthyl on acctone chieful.

Hepterchy (from Gk. arra, seven, and dρχη, kingdom), name given to the seven kingdoms, Kent, E. Anglia, Sus-ex. Wossex, Northumbria, Mercia, and Essex, comprising Saxon Fugland. They were comprising Saxon Figland. They were not contemporaneously distinct and inde-pendent kingdoms, but at some time between the fifth and minth centuries they each had a separate existence. At the beginning of the unth century, Wessex, under King Eghert, became the strongest, and absorbed the other kingdoms.

pomogranate, the symbol of wedded love and fruitfulness.

pomogranate, the symbol of wedded love and fruitfulness.

Heracleia Lyncastis, see MONASTIR.

Heracleia, name given to a number of anct. (ik. tns.: (i) An anct. place of Pisatis in Ells, distant about 45 stadis from Olympia, noted for its medicinal waters. (2) A city of Magna Gracia, lectween the rivs. Aciris and Siris, on the gulf of Tarentum. It was probably founded about 432 B.C., and was first estab on the anct. site of Siris. It rapidly nose to prosperity, and was selected as the place of needing of the General Assembly of the Italiot Gks. During the war of Pyrchus with the Roms., the consultavinus was defeated in 280 B.C. near this city. It, was still a flourishing and important to. in Cicero's time, and was in existence much later still. but is now extined. The 'Tabulae Heracleenses,' bronze tablets containing the letacleenses,' bronze tablets containing the letacleenses,' bronze tablets, were discovered on this site. (3) II. Minon, on the S. coast of Sicily, at the mouth of the R. Halyeus, between Agrigentum and Sellinus. It appears to have been a colony of Schinus, at first bearing the name of Minoa, but was exteed by Euryleon. a Spartan, who gave it the name of H. It was occupied by the Carthaginan gen., Hauno, in 280 B.C., and in 250 was the scene of the defeat of the Punic fleet, and appears to have been on the prin. naval stadions of the Carunder King Egbert, became the strongest, and absorbed the other kingdoms. Heptat act would like with a seven and new conditions of the Bible, is formed on the analogy of Pentateuch. It is specially used to designate an A.-S. trans, of these books and the book of Job. made in the tenth century, copies of which are in the Bitl. Museum and the Bodielan Library. Heptoic Acids, acids belonging to the tenth century, copies of which are in the Brit. Museum and the Bodielan Library. Heptoic Acids, acids belonging to the fatty series, having seven carbon atous (C.H., O.). The only important one is the normal heptoic acid, or occanthol or normal heptoic acid, or occanthol or normal heptoid results and finite of Leus. Equivalent of ill. under reduced pressure and fraction ating the product.

Hera, in Gk. mythology the queen of Heaven, daughter of Cronus and Rheat and sinks the mother of Hephanical and Rheat and sinks the foliage of the Rom. Jano. She shared the power of heaven, daughter of Cronus and Rheat and sinks the foliage of the Rom. Jano. She shared the power of the form about 34 R.C., when it was partly destroyed by Aurelius Cottan and sinks the foliage of the first personal and the first personal and the foliage of the first personal and the foliage of the first personal and the first personal and the first personal and the first personal and the foliage of the first personal and the f

over his native city. He appears to have travelled in his youth, and on his return to Ephesus was offered the chief magistracy, which, however, he refused, likewise declining an invitation of Darius to visit his court, in order that he might live in retirement. His later years were devoted to his great philosophical work On Nature, in which he asserts that everything is in a state of eternal flux (Harkhetrog филко магта реі), so that nothing can escape final destruction, not even the can escape final destruction, not even the gods, and that the ultimate principle into which all existence is resolvable is fire. gods, and that the ultimate principle into which all existence is resolvable is fire. That fire changes continually to water, and then into earth, and that the earth changes back again to water, and the volved by a natural operation from fire which is also the luman life and soul, and therefore rational, an intelligence which guides the whole universe. Spengler derived from H. the idea of change as continuous and rhythmic, as never-ceasing yet exhibiting a definite pattern. It was not, however, the assertion of the reality of change which led Justin Martyr to speak of H. as a Christian before Christ. It was rather the discovery of rhythm or pattern in the process of change that appealed. H., having introduced into Gk. philosophy the term logos, (with which the Fourth Gospel opens), Justin Martyr confidently asserts. 'They who have lived in company with the Logos were Christians, even if they were accounted atheists; and such, among the Gks. were Socrates and Herneleitos.' See J. Burnet, Early Greek Philosophy (chap. ii.), 1892: cf. J. Adam, Religious Trachers of Greece, 1908: also G. O. Griffith, Interpretations of Readily, 1946.

Herseles, see Herculks.

Herselian, or Heraellanus, one of the

Heracles, see HERCULES. Heracles, see HERCULKS.
Heraclian, or Heraclianus, one of the officers of the Emperor Honorius, to whom he rendered good service during the invasion of Italy by Alaric and the usurpation of Attalus. He revolted against Honorius in 412 and, proclaiming bimself emperor, collected ships for the invasion of Italy. This he accomplished in A.D. 413, but was defeated and put to death. He is said to liave murdered Stillcho in A.D. 408.

Heraclidæ (Ἡρακλείδαι), patronymic from Heracles, and consequently given to all his descendants, but more especially to those who invaded and took possession of the Peloponesus. It had been willed by Zeus that Heracles should rule over the empire of Perseus, but owing to a trick of Hera's, Eurystheus had taken first place, Heracles becoming his servant. After the death of the latter, however, his sons asserted their claims, and being led by Hyllus, the son of the hero by Delauira, they invaded the Peloponnesus to take possession of the countries acquired by

governor-gen. of Africa, and was born in Cappadocia about 575. In 610 he was sent by his father against Phocas, who had sent by his father against Phocas, who had usurped the throne of Constantinople, conquered him, and was elected emperor by the people. He found himself in a difficult position, for E. ompire was then in a miserable state, but he managed to get rid of the Avars in 619, and turned his attention against the Persians. The war which had broken out in 603 between Phocas and the Persian king was still raging, and in 616 Egypt fell into the hands of the Persians, so that Constantinople was deprived of its corn supply. Added to this, Constantinople, too, fell into the hands of the Persians the same year. H. wasted his opportunity, got ready an army, and commanding his troops in person, fought sev. battles against the Persians which resulted in the reconquest of Syria and Jerusalom, an against the Persians which resulted in the reconquest of Syria and Jerusalem, an achievement which seemed at the time impossible. But his glory was of short duration, and before he died, Syria, Palestine, Jerusalem, Mesopotamia, and Egypt came under the dominion of the caliph. H. apparently doing nothing to prevent this.

Hermum, temple of Hera, situated between Argos and Mvccne, and, according to Strabo, the joint sanctuary for both these tas. until the fifth century, when Argos vanquished the Myceneans. In 423 n.c. the old temple was burnt down, and the Argives erected a new one built by Eupolemos, in which was placed the great gold and ivery statue of Hera, by the sculptor Polyclitus. Excavations were made by the Amer. Archeological Institute and School of Athens, 1892-95.

Heraklion, (1) prov. of Crete, Greece, sltuated in the centre of the is. Pop. 162,900. (2) Cap. of the above, now known as Candia (q.n.).

Herald, officer of the Royal Household, who acted, and on certain occasions still tween Argos and Mycenie, and, according

who acted, and on certain occasions still acts, as messenger between sovereigns and is entrusted with the management of state is entrusted with the management of state ceremonial and who formerly superintended jousts, tournaments, and other public ceremonies and supervised coat armour. He was attended by 'pursuivants,' who were learning the duties of the H. The chief of the Hs. acquired the title of 'King of Arms,' and in England in the reign of Edward III. there were two kings of arms, Norroy and Surroy, but in Henry V.'s reign a new king of arms was instituted called 'Garter King of Arms,' and he, together with the other kings of and he, together with the other kings of arms and Hs., was in receipt of certain fees connected with public ceremonials and creations of peers. The Eng. kings of arms and horalds are under the control of the earl Marshal and still carry out state y Hynns, the son of the nero by Delanira, they invaded the Peloponnesus to take possession of the countries acquired by their ancestor. They were at first unsuccessful, but finally conquered Argos, Messenia, and Sparta, and estab. themselves there.

Heraclius, see Heracletus, Rom. emporor of the E. reigned from A.D. 610-641. He was the son of Heraclius the Elder, Lyon,' whose origin is lost in antiquity. It is one of the public courts of Scotland, is situated in H. M. Register House, Edinburgh, and deals with the heraldry genealogy, and state ceremonial of that kingdom.

In anct. Greece the Η. (κῆρυξ), Whose person was inviolable, was of great importance. He summoned the assemblies of the people, at which he maintained order and silence, proclaimed war, and assisted at public banquets and sacrifices. So, too, in Rome the 'Apparitores,' whose duties were similar to those of the Gk. siput, and the 'Fettales,' a special class chosen from the most distinguished chosen from the most distinguished families who managed the settlement of war and peace, were held in high esteem; only the 'Præcones,' who acted as 'criers' of public sales, etc., were despised.

Heraldry. The term originally denoted the knowledge and business of the herald, but it is now almost invariably applied to the science of armorial bearings. It has long borne this meaning having con-

to the science of armorial bearings. It has long borne this meaning, having supplemented the earlier name of armory. We find evidences of the use of some badge or sign to mark off a tribe, family, or individual, in the earliest days, and in all parts of the world. Homer and Aschylus describe the devices which the heroes bore describe the devices which the across bore on their whicks, and antique vases of classical times show many such. But H., in its local symbols, was a later development than was once thought. The Bayeux Tapestry, though it shows devices on the shields of the knights, proves also that these devices were not armorial bearings in the later were for in different ings in the later sense, for, in different parts of the tapestry, the same knight is represented with different devices. The mixture of nations caused by the Crusade must naturally have brought about a more must naturally have brought about a more regular system of insignia, and it is in the twelfth century that we must place the estab. of H. The striking feature is the way in which the science spread throughout Europe within a few years of its inception. It instantly and adequately filled the need, so pressing in illiterate days, of a simple system for identification of those occupying positions in public life. Its use in civil and domestic life, both for descretion and, especially, for legal pur-Its use in civil and domestic life, both for decoration and, especially, for legal purposes on seals, for authentication of deed, had more to do with its popularity than use in warfare. No effective substitute for it has ever been invented. The misuse of another's arms was treated as equivalent to forgery, so in order to be certain of acting correctly, it became the practice to consult the heralds, who were responsible for seeing that arms and banners displayed in the Royal Army were correct and known in the Royal Army were correct and known to the commanders. Identification of to the commanders. Identification of the unit in a foudal army depended solely on these devices. Early feudal magnates conferred arms on their vassals, usually based on their own arms; but, in cases of dispute, a grant from the king naturally prevailed over a grant from any subject, so the theory followed that valid arms must originate in a grant from the Crown, which exacted fees, as on every other which exacted fees, as on every other description of Royal grant.

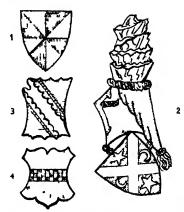
The prestige attaching to armorial bearings lies in the recognition that a grant of arms infers a grant of 'nobility, (in the continental sense), i.e. gentility, in Britain. It has been questioned whether in the continental sense), i.e. gentility, in lifitain. It has been questioned whether arms necessarily connote gentility in England, but in Scotland non-gentile people are expressly forbidden to bear arms at all. At the time heraldry arose, nobles alone required or had the opportunity of using arms. When a man acquired a feudal tief, or other public position, he received arms as a matter of course. Corporate hodies and cities were soon by analogy held to be persons who either were, or could be, ennohled by grants of arms, and nowadays corporate hordies are very jealous of any infringement of their heraldic rights. Early bearings were simple in character, and were generally chosen so that they might suggest the name of the bear of Berne are well-known examples. The heraldic movewell-known examples. The heraldic movement started in France and Germany, and con spread to Britain and the rest of Europe. In England it developed rapidly during the thirteenth and fourteenth cen-turies, reaching its climax in the reign of Edward III. In the nineteenth century a Edward III. In the nineteenth century a revival commenced, and the historic, scientific, and artistic importance of heraldry was realised. It has once more attained a level worthy of the esteem in which it was beld in the Middle Ages.

Heraldry is still a living science, and in England the Heralds' College (i.e. the Royal Officers of Arms incorporated in 1493) continues to exercise its functions.

1193) continues to exercise its functions. 1143) Continues to exercise its functions, Carter King of Arms is at the head of the College, and, under the control of the earl Marshal, makes fresh grants of arms (£77 upwards) and records pedigrees. In England it has been difficult to enforce the law, since the Registers of the College are private, and the officers remunerated from private, and the officers remunerated from a div. of the fees. In Scotland and N. Ireland, the kings of Arms are salaried officials, and the fees are collected for H.M. Tronsurv as part of the Inland Revenue. Ulster King of Arms formerly 'Principal Herald of All Ireland,' is now incorporated with Norroy, King of Arms of England. In Scotland, heraldy has seemed a more important standing than assumed a more important standing than in any other nation, largely owing to the clan system, with its veneration for lineage and kinship (see Lyon King or

ARMS).

In 1672, all older registers were super-seded by the 'Public Register of All Arms and Bearings in Scotland,' in which arms and Bearings in Sections, in which all existing arms were ordered to be registered within a year, as well as future grants. The striking feature of Scots heraldry is that there are relatively few surnames in Scotland, and therefore comsurnames in Scotland, and therefore com-paratively few basic coats of arms. The science has largely developed by differenc-ing these basic arms for the numerous off-shoots from the main lines of clans and families. These 'matriculations' are registered at lower fees on proof of the relationship. If this cannot be estab., 'Letters Patent (£48 upwards) are issued.



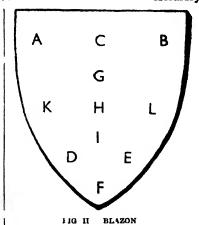
THE SHIFID AND ITS PARTS FIG. I

The Shield and its parts. At different periods the escutcheon or shield on which in a coat of arms the charge are placed in a coat of aims in charge the placed has varied considerably in shape. The simplest form and that most commonly used is shown in Fig. I. (No. 1 (amphell) Those shields were often placed at an angle, as in No. 2 (Haig of Benersydo), when surmounted by a helmet or crest angie, as in No. 2 (Haig of Beniers, do), when surmounted by a helmet of creet. This position is known is couche and is much the most artistic. It is that used in the stallplates of the Knights of the Garter and the Thi it and is the natural angle at which a shield hung from its quere or strop. In later times in it florid forms were used, such as are represented in No. 3 (Kortescue), such shields are of the late fourteenth or fifteenth entury and their somewhat is quere slape is noticeable. In the sectionth entury an even more flouid but symmetrial type of the base of the shield became nopular. The notch on the dexter chief of No., represents the lane rest. A wideling of the base of the shield became necessary as quarterity be une more commen.

Bla. n = In order that coats furms may be out by an and accounted, described or as it is that ally called theorem, affected as it is that ally called the contribution of the points the sum in the soutchoof. The points the sum in the as follows (Fig. II.). As the described of the sum of the soutchoof.

points this num I we as follows (Fig II) B the sinister A is the dexterchief point chief the D the base I the shu ter has I the neighbors I the shu ter hase I the neighbors I the neighbors for the we may add I the rom bril of navel point K the device flink and L, the smister flank. The upper part of the escutcheon is known as the chief of the escutchion is known as the chief silver eras, upon a gilden field it the lower as from a control to the wearn not from the viewpoint of the spectator.

Tinctures—The surface of the escut cheon on which a charge is placed is multiple bearer to the king at the termed the field and coats of arms are distinguished not only by their energes,



II DLI

but also by the colour of this field is technically termed the tineture of the of the field, and may represent a metal a colour of the field, and may represent a metal a colour of the field from Norman Ir is 19 most of the her addit nomenclature. The metals are two manumber. Of (gold) and Argent (silver). They are represented in engiasings the metals and the other tests and the state of the state of the state. The are represented in engiavings the one by dots, and the other by a plain field (see Fig. 111 No. 1 and 2). There are five colours viz Azure (blue) represented in engiaving by horizontal hatching Gules (field) acress intend by perpendicular hatching sabl (black) by perpendicular and horizontal hatchings, crossing out other. Vert (green) shown by diagonal lines drawn than district the fire symptom. lines drawn from decter chief to smister base. Purpure (purple) represented by diagonal hateling from sinister chief to lexter best liest terms are also used to describe the harges if the charge is represented in its natural columnone of these conventional functions being used, these conventies if includes being used, it is said to be project. I light turs are also used as tinctures for fields. I rining is represented by black mails resembling those of the function to whate ground. Values said to be derived from the functional bells arranged in horizontal rows as shown in Fig. 111 (No. 9). It is a strict rule of H. that a colour must not be set upon profile. be set upon another but only upon a metal or a fur thus rone of the prime rules of the selence set it has sometimes ben violated de gnedly, in order to honour a grant by drawing stention to it such a breach of the rules was permitted to the Montmorencys, who assumed a silver cross upon a gold a field in order to cmphasize that their, was the first family in Gaul to become Christian and similarly breach on behalf of John Codlington, standard bearer to the king at Agincourt.

Directors of fields — kields are divided to the control of the con

m numerous ways so that the different parts may have different tineture and

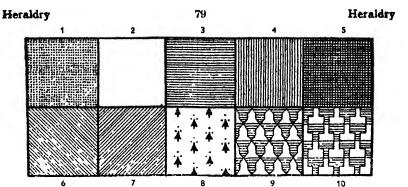
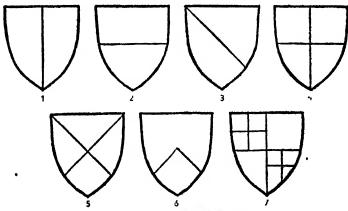


FIG. III. TINCTURES

divided as in Fig. IV. No. 1 is said to be alone, but more commonly they appear in A pale is a perpendicular strip (see bibit). Combination with some other tigures, or A pale is a perpendicular strip (see bibit), and an escutcheon bearing three pales of one tincture upon a field of another time, making six pales in all, is blazoned as paly. Other methods of dividing a shield marked of by a line of div. Accordingly and the pales of divided as in Fig. IV. No. 1 is said to be alone, but more commonly they appear in of its diss again quartered, and is de-scribed as counterquartered or quarterly - chief. (2) The Fess is a horizontal band quartered. The large diss, are then a cross the centre of the shield occupying known as the Grand Quarters. Thus in one-third of the depth, though it and the

known as the Grand Quarters. Thus in one-thred of the depth, though it and the No. 7, the top right and bottom left are pale, which should also occupy a third of counterquartered, the other divs. being the whole space, actually vary, as does grand quarters.

Ordinaries to the chief. (3) The Pale has already been cyclained as a vertical band in the centre given to certain of the carliest devices of the field. It is not common. (4) The H. They are marked by simplicity of Cross appears in numerous forms, of which the best known are those which straight lines. Occasionally they appear appear in the Union Jack. The study of



DIVISIONS OF FIELDS FIG. IV.

the cross in H. is complicated by the fact that many of the forms have themselves undergone much adaptation in different according to the position or condition of times and under different hands. The cross should occupy one-fifth of the field unless charged, when it occupies one-third. (5) The Bend is a band crossing the shield from the dexter chief to the position or condition of the charges are described monothers. The charges are described monothers. The charges are described monothers. The lien, in particular, being the most popular beast in medieval II., is found in many positions. Thus it is described as a iton rampant, rampant gardant, salient, sejant, couchant, being the most popular beast in medieval II., is found in many positions. Thus it is described as a iton rampant, rampant gardant, salient, sejant, couchant, being the most popular beast in medieval II., is found in many positions. field unless charged, when it fills one-third. The bend sometimes appears over other charges and in a narrower form, sometimes called the Baston, it was commonly placed over the arms of a younger son. There is no such thing as a 'bar-sinister' in heraldry, but a baston-sinister is one of the marks used to indicate illegitimacy—usually in the case of royal bastards. All charges placed on a bend are put bendwise, that is to say, they are slanted at the same angle as the bend. The last instance of the batter stricts according to the contract of the same angle as the bend. of the baton sinister occurred as late as the nineteenth century, in the arms of the earl of Munster. Modern H. has adopted another device in its place—the bordure wavy—to denote bastardy in England; while in Scotland it is denoted by the bordure company. In England alone the lesson is driven home by means of a bendlet sinister wavy, or a pallet wavy, on the crest. (6) The Chevron is formed from two bands starting respectively from dexter and sinister base and coming together about the honour point. It should occur one-fifth of the field. of the baton sinister occurred as late as the trom dexter and simster base and continued together about the honour point. It should occupy one-fifth of the field.

(7) The File is a triangular wedge-shaped tigure generally commencing at the middle chief and tapering downwards.

(8) The Quarter is formed of the first quarter of the shield cut off by lines. It is quarter of the shield cut off by lines. It is now very uncommon, having been sup-planted by the canton, which is smaller but of the same form. Other ordinaries are the Scotchoon or shield used as a charge; the Tressure, a narrow border which follows the edge of the field (in Scotland a double Tressure Fleury Counterfleury is a high honour and never shield cut off by curved lines; the Fret, formed by diagonal lines crossing or inter-lacing. A field entirely covered by a fret is described as fretty. A gyronny field is one divided both per fesse and per saltire. The Lozenge has an clongated form termed the fusil. Billets are oblongs set vertically. Roundels may be considered together with the ordinaries. They contogether with the ordinarios. The consist of disks or balls of various colours; they have received different names according to the colours. Thus the bezant is or; the plate, argent; the hurte, azure; the tortrau, gules; the pellet, asble; and the pomme, vert. The first two of these and the fountain, which is a rounded divided horizontaily by navy roundel divided horizontally by wavy lines, are represented as flat, but the others are shaded to appear spherical. The ring or annelet is also a common charge.

Common charges.—Under this head are grouped representations of animals, birds,

rampant gardant, rampant regardant, passant gardant, salient, sejant, couchant, etc. We have also such forms as the deetc. We have also such forms as the demilion and the lion's head crased. Other common charges are the stag, leopard, eagle, dolphin, griffin, escallop, rose, fleur-de-lys, estolle (star), and various kinds of trees. The demi-lion, demi-man, demi-rose, etc., show the figure couped or cut off in the middle.

Differencing .- The undifferenced arms, i.e. the whole coat, is borne only by one person, and is by him banded on to his heir. Until he succeeds to the undifferenced coat-of-arms, the heir wears it with some difference, the commonest being the addition of a label. Younger sons also differenced the puternal arms, and this was done in various ways, sometimes by a change of tincture, or by the imposition of a bend, or by surrounding the arms with a bordure.

Marshalling,—To marshal arms means to combine sev. independent coats on one shield, and is used chiefly to denote marriage, or the representation of other families through heiresses. At first, a woman used the undifferenced arms of her father, and the shields of husband and wife were placed side by side, termed accollec-Later on, they used one shield, divided per pale down the centre, the husband's arms being placed in the dexter half of the

shield, the wife's in the smitter half.

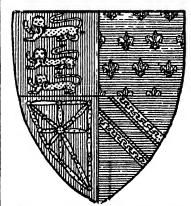


FIG. V. ARMS OF QUEEN ISABELLA

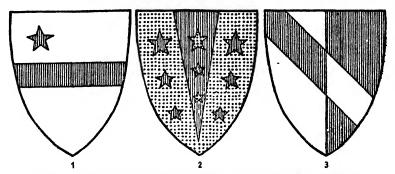
Official arms, such as those of Eng. bishops and certain high officials, are also impaled with the family arms of the prelate or officer. In this case, the official arms are on the sinister. The practice of quartering became common in the four-teenth century. When a man married an

heiress, or inherited arms from an heiress mother, it was often desirable or necessary to display both coats, and where a family had married successive heiresses, it was convenient to divide the shield in four or convenient to divide the shield in four or more divs., and put the arms of the suc-cessive heiresses in each. Quarters are numbered: (1) Dexter chief; (2) sinister chief; (3) Dexter base; (4) sinister base. If it is necessary to quarter many arms, the shield is divided into more compartments by vertical lines, but the divs. are still called by the same name. In Eng-land, the shield may be divided into any number of quarterings, but in Scotland a shield can only have four quarterings. Scots quartering added requires a rematriculation. An early example of quartered arms may be seen in those of Isabella, wife of Edward II., who bore in

and the name of no colour is repeated if and the name of no colour is repeated if it can be avoided. Thus the arms of Robert de Chandos, differenced with mullets as a mark of cadency are shown in No. 2 of Fig. VI. These are blazoned, 'or a pile gules charged with three mullets of six points gold between as many others of the second.' The ordinary, however, is named last if it surmounts another charge. When a bend or fesse crosses a field of two tinctures, it is often counter. charge. When a bend or fesse crosses a field of two tinctures, it is often counter-changed, i.e. the colour of the bend, etc., is reversed as it crosses the field. This can

of reversed as it crosses the neid. This can be seen from the arms borne by the poet Chaucer (No. 3), 'per pale, argent and gules, a bend counterchanged.'

The Helmet.—Above the shield is set a helmet: gold with grills, for sovereigns; eilver with grills, for poers; steel with open visor for knights and baronets;



ARMS OF ODINGSELES, ROBERT DE CHANDOS, AND CHAUCER

the four quarters the arms of England, France, Navarre, and Champagne (see Fig. V.). A husband may always impale Fig. V.). A husband may always impale his wife's arms, whether she is an heiress or not, but in England the practice has arisen of depicting the arms of an heiress wife upon an inescutcheon of pretence, viz. a small shield in the middle of the husband's shield. The arms upon the inescutcheon become a quartering in the next generation.

Blazoning .- To blazon a coat-of-arms is to describe it accurately so that it could be reproduced by anyone having a knowledge of H. Besides the conventional terms of which the most important have been explained above, there are certain other conventions to be observed, chiefly as regards the order. First is named the field, in one word if it be of one tincture. If it be a quartered held, the tinctures are named in order, preceded by the manner of partition. Then follow the charges, the most important being named first. If a most important being named first. If a charge is in any position other than the centre of the field its position is described.

steel with closed visor for esquires and gentlemen. The Royal Helmet is always gentlemen. The Royal Helmet is always shown full face and affronté. In England shown full face and airronte. In England there are seventeenth-century rules that peers, 'esquires,' and gentlemen's holmets must be shown in profile, knights' and baronets' full face. In Scotland, provided the correct type of helmet is displayed, it may be shown at whatever angle best suits the crast.

To mitigate the heat of the sun upon a below it was every suits.

To mitigate the heat of the sun upon a helmet, it was covered by a cloth cap, which became jagged in battle, and in this form is known as the mantling or lambrequin. Its lining is the colour of the prin. 'netal' of the shield, its outside the prin. 'colour,' but peers' mantlings are lined ermine, and in Scotland are crimson outside. At the joint between the mantling and the crest is a twisted skein of silk of the prin colours and metal of the arms. ing and the crest is a twisted skein of silk of the prin. colour and metal of the arms, termed the wreath, or torse. Above this is the crest, which originated in a fan or plume of feathers, but in the fitteenth and sixteenth centuries developed into a weighty device moulded out of leather or wood, more frequently used at tournaments and ceremonial than in warfare. 'Horaldic stationers' invariably draw the helmet and crest much too small in re-Thus Odingscles bore the arms depicted in Fig. V1. No. 1, which are blazened as argent a fesse gules with a molet gules in the quarter.' Sometimes the ordinary is the helmet and crest much too small in reitself blazened. Repetition is avoided, lation to the shield, the actual proportion-

Fig. I., No. 2.

Supporters.—Peers, and in Scotland chiefs of clans and a few others, are entitled to have their shield and helmet supported by two creatures (usually human beings or animals). These are considered, a high honour, granted only in exceptional circumstances, and they de-scend to the peer or chief only for the time being, and not to the younger sons. Wives and widows of the peer or chief may use them, but not daughters. In Scotland they are borne also by the son and heir to whom they will eventually

and her to whom they past is an helrest of entail in Scotland.

Royal Arms.—These 'ensigns of sovereignty,' or 'symbols of public authority,' are governed by different rules. from other arms. They do not pass by succession, even to younger sons of the sovereign, such princes each receiving specially differenced versions by Royal Warrants direct d to the Lard Marshal or the Lord Lyon. Where a king successions the consequence of the succession of the consequence of the c ceeds to the sovereignty of more than one state, a quartered royal coat-of-arms results. Thus, the Brit. Royal Arms now melude quarters representing the sovereignty of England, Scotland, and Ireland. Until 1800, the kings of England claimed to be, and styled themselves, kings of France, and therefore quatered the Fr. illies. From 1714 until 1837, the Brit. Sovereign was also king of Hanover, the arms of which were placed on an escut-cheon, but under the Sale Law that kingdom did not pass to Queen Victoria, and accordingly the arms of Hanover were dropped. The Prince of Wales bears the Royal Arms, differenced by a label as heir apparent, and with an escutcheon of the arms of the principality of Wales. The Royal Arms of each soversign state indicate the public authority of its ruler; that is, the three leopards of England, the tressured lion rampant of Scotand, and tressured from rampant of Scotaind, and the blue field and golden harp of Ireland, indicate the public authority of the ruling power, within each state; the National Placy (St. George's Cross for England, St. Andrew's Cross for Scotland, St. Patrick's Cross, a green flag with a golden harp, for Ireland) indicate national identity. Similarly, the quartered Paral (St. Window) presence indicate national identity. Similarly, the quartered Royal 'Standard,' properly Banner, is the insigna of the ruling authority—the Grown, in Great Britain; the nomed crosses, or Union Jack, the national flag, indicating Brit. national identity.

Heraldic Flous.-Armorial were not confined to the shield or tabard worn over the armour, which was the literal coat-of-arms often seen on anct. sepulchral brasses, but were also used in flags or banners, a term which refers to a rectangular flag displaying the cont-of-arms, whilst pennons and standards are long, pointed flags usually displaying the

as used and drawn in the fourteenth plates, book stamps, silver-plate, seals, and differenth centuries will be seen in and signet rings, stamped or tooled leatherwork.

Inland Revenue .-- In Great Britain there is an ann. duty of one guinea for use of armorial bearings, two guineas for use on a vehicle. Payment of these duties does not give the right to appropriate a coat-of-arms, and is equivalent merely to a licence to keep a dog, gun, or motor. A cont-of-arms must be obtained through Garter, Lyon, or Ulster, and in Scotland payment of the ann. duty is no defence in a prosecution for use of unregistered arms. See also under LORD LYON KING OF ARMS. See also under Lord Lyon King of Arms.
See J. Baltour Paul, Heruldry in Relation
to Scotlish History and Art, 1899; A. C.
Fox-Davies, The Art of Heraldry, 1905,
and Complete Guide to Heraldry, 1925;
sir W. St. John Hope, Heraldry for
Craftsmen and Designers, 1906; J. H.
Stevenson, Heraldry in Scotland, 1911;
W. Ewald, Siegell-ande, 1914; C. W.
Scott Giles, The Romance of Heraldry,
1929, Ciric Heraldry, 1933, and Shakespeare's Heraldry, 1919; D. L. Galbreuth,
Papal Heraldry, 1935; A. Wagner,
Heralds and Heraldry, 1936; C. and A.
Lynch-Robinson, Intelligible Heraldry,
1918; Green's Encyclopaedia of the Laws 1918: Green's Encyclopaedia of the Laws

of Scalland.

Heralds' College, or College of Arms, corporation founded by Richard III. in 1183. It is presided over by the Earl Marshal (whose ofter is hereditary in the tamily of the duke of Norfolk), and consists of the duke of Norfolk), and consists of the Garter, Prin, king of Arms of England; Clavenceux, king of Arms N. of Trent; Norroy, king of Arms N. of Trent who now also holds the office of Uster King of Arms; the heralds named Chester Windson, Langaster Richmond Chester, Windser, Lancaster, Richmond, York, and Somerset; and four pursulvants, Bluemantle, Portcullis, Rouge vanis, Bluemantle, Pottenllis, Rouge Pragon, and Rouge Cross. They at first resided at Cold-harbour, or Pulteney's Inn, in the par, of All saunts, but in 1554 Queen Mary gave them a building opposite St. Benet's, which was rebuilt after being burnt down in 1660. The heralds-extraordinary appointed by the front are not members of the H. C. The H. C. has no juri-diction in Ireland, where I later king of Arms controls heraldry, nor in Scotland whose heraldry is under control of the Lord Lyon king of Arms (g.r.).

Herat, (1) fort, and second largest city of Alghanistan, in the prov. of H., on the R. Heri Rud, about 410 m. W. of Kabul. It is situated in a valley about 120 m. long by 12 m. wide, and is built on an artificial mound nearly 1 m. sq. and 55 ft. in height. It was for a long time the cap. of the extensive empire ruled by the descendants of Tinur; but its chief importance now lies in its strategic position, being regarded lies in its strategic positions of the same as the gateway to Afghanistan and India. The manufs, include silk, leather, and woollen goods, and carpets. Oil has been woollen goods, and carpets. Oil has been found in the vicinity, Pop. 85,000.
(2) Prov. of N.W. Afghanistan, pop. 770.000.

badge and motto only.

Use of Herudry.—Heraldry is used in almost every conceivable way. In architecture, stained windows, and carring in Lyons. The surface of the dept. is varied, wood and stone, and on furniture, book-

rise two hills, the Pilier de Saint-Clair and | and in his criticism in 1796 of Schelling, Saint-Loup, and behind this sandy tract lies a series of pools (dangs), and behind these again plains and bills. The riva-are the Aude, the Orb, and the Herault. The dept. Is especially famous for its wine, one-third of its surface being planted with vines, but wheat and oats are also grown. Fruit trees, too, ilourish, but especially mulberries, clives, and chestnuts, and silk-worms are reared. There is considerable mineral wealth, coal, iron, copper, and sea-sult being found in large quantities. The chief manufa, are coarse cloths, brandy, soap. The dept. is divided into brandy, soap. The dept. is divided into the 3 arrons, of Montpollier, Béziers, and Lodève. Cap. Montpoller. Area 2402 sq. m.: pop. 461,100. (2) Riv. of France which rises in the Cevennos and enters the Mediterranean near Agde. It has length of 122 m.

Herbarium, also called Hortus siccus, or dry garden, is a systematically arranged collection of dried plants, intended to facilitate the study of botany. The specimens are prepared by being laid between sheets of blotting or botanical paper and afterwards subjected to pressure the stream with the systematics. sure; certain flora, such as orchids, c.c., have to undergo special preparation because their succulonce admits only of Mariborough College contains the Wedgwood collection of dried plants, while the H. of Manchester Yuseum was presented to it in 1901 by its founder, J. C. Melvill. Paris contains a notable H. in the Jardin des Plantes, while the H. in Berlin sattached to the univ. Brussels, Geneva, Vienna, and Leningrad also have good herbaria. In S. Africa the National H. is estab. in Pretoria; in India, in Calcutta; and in Australia, in Melbourne. The U.S.A. can boast of sev. H, containing mainly flowers of America; among these are the Gray H, (founded by Asa Gray) of Harvard Univ. and the H. in the New York Botanical Garden. The Field Museum of Natural Hist. in Chicago Field Museum of Natural Hist, in Chicago (founded by Marshall Field in 1893) also contains a very carefully classified 11. contains a very carefully classified II. See C. F. Millspaugh, Herbarium Organization, 1925.

Herbart, Johann Friedrich (1776-1841), Ger. philosopher and educationist, b. at Oldenburg. He began to study logic at the age of cleven and metaphysics when twelve, and at the gymnasium of hisnative the, which he entered in his thirteenth year, his favourite studies were physics and philosophy. In 1794 he left this institution and went to the univ. of Jena, becoming the pupil of Fichte, but began to disarree with his master. the age of cleven and metaphysics when he soon began to disagree with his master,

whose philosophy he considered the most logical form of Idealism, he says: 'How-ever many happy thoughts may be seat-tered about in Fichte's deductions regarding natural right and morality, I consider the fundamental points, i.e. his theory of the fundamental points, i.e. nis theory of the recognition of a reasoning being as such, and his doctrine of freedom, as false. Leaving the univ. in 1797, he acted as private tutor for two years, and then went to Bromen to study philosophy, publishing his views on educational publishing his views on educational publishing his views on educational reform in 1801, Ideen zu einem pädagoguschen Lehrplan fur hohere Studien. This was followed in 1802 by his essay on Pestalozzi's work, If ie Gerfrud thre Kinder Petalozzi's work, Wie Gertrud thre Kinder thrt, as well as by a treatise on the same author's Idee eines A B C der Anschaumg. The same year he went to Göttingen and pub. A B O der Anschaumg (1802), Die arthetische Darstellung der Well als das Hamptgeschäft der Erzichung (1801), Standpublich der Beurtheilung der Pestalozzi's scha Unterrichtsmethole (1801), Allgemeine Pedagogoik (his prin work on edwascha Unterrichtsmethole (1891), Allge-meine Padagogik (his prin. work on editea-tion), Hauptpunkte der Metuphysik (1806), Hauptpunkte der Lonk (1806), and Alle-gemeine pruktische Philosophie (1808). In 1809 he accepted the chair of philosophy at Konigsberg, und pub. in 1812 Lehrbuch zur Lin leitung in Philosophie, his best known and most widely read book. His chief psychological work Psychologies nave to undergo special preparation of cause their succulonce admits only of slight pressure, and they are sometimes placed in hot and or suspended before a fire. Mosses, hear as and similar plants can be preserved dry in packets; when moistened they regain their appearance milic. The largest fit in the world is contained in the Royal Botauli al Garden, at Kew, which is constantly receiving new additions from the various colonies and as the result of botannal expeditions and explorations. The collection made by Carl Linnaus bas been the property of the Linnaus presentations (Vorsellungen). He also pub. in 1831, Encyclopadie der Philosophie. In 1833 be returned to Gottingen, where he spont his last years, and wrote in 1833, as a supplement to Allgemeine Padagogik, Umriss padagogischer Vorlesengen. II. is Umriss padagogischer Fortevengen. H. is proportant as being the only modern thinker who has not treated education casually in his works; indeed, for him it was the starting-point and end of all his myestigations. He says himself, 'I for my part have for twenty years called to my aid metaphysics and mathematics, besides self-observation, experience, and experiments, in order only to find the foundation of true psychologic knowledge.' He imbibled the ideas of Pestalozzi, his friend, and did much to make education and educational methods a science. As to his and did much to make education and councational methods a scionce. As to his philosophy which was based on that of Kant, the cardinal point of his ontology is that it is a "pluralistic realism." As a metaphy-ician II. proceeds from what he calls 'the higher scepticism' of the llume-Kantlan sphere of thought, the source of which he sees in Locke's perpleyity ever the idea of substance. By this scentificant the real validity of even this scepticism the real validity of even the forms of references can be questioned

to involve; but that these forms are given to us as truly as sensations are, follows incontestably since we can as like control the one as the other. Amongst the post-Kantian philosophers H. ranks next to Hegel in importance, apart altogether from his great contributions to the science of education. 'His criticisms,' science of education. 'His criticisms,' says Dr. James Ward, 'are worth more than his constructions; indeed for exactness and penetration of thought he is quite on a level with Hume and Kant... But we are most of all indebted to Herbart for the enormous advance psychology has been enabled to make, thanks to his fruitful treatment of it, albeit as yet (1880) but few among the many who have appropriated and improved his materials have ventured to adopt his metaphysical and mathematical foundations. See H. A. have ventured to adopt his metaphysical and mathematical foundations.' See H. A. Fechner, Zur Kritik der (irundiagen von Herbarts Melaphysik, 1853: T. Lipps, Zur Herbart'schen Ontologie, 1874; M. W. Drobisch, Über die Fortbildung der Philosophie durch Herbart, 1876; C. Ufer, Vorschule der Pidagogik Herbarts, 1833; L. Strümpell, Das System der Pudagogik Herbarts, 1894; H. M. and E. Felkin, Introduction to Herbart's Science and Fractice, 1895; J. Adams, The Herbartian Psychology Applied to Education, 1898; F. H. Hayward, The Student's Herbart, 1902; A. Darroch, Herbart and the Herbartian Theory of Education, 1903; J. Davidson, A New Interpretation of Herbart's Psychology, 1906; H. Zimmer, Führer durch die deutsche Herbartshteratur, 1910; R. D. Chalko, Synthess of Fruebel and Herbart, 1912; T. Fritz-ch, Herbart und seine schule, 1928.

Herb Christopher, see BANKBERRY.

Herbede, tn. in the dist. of Arnsberg, Westyhalla, Germany, on the Ruhr. It has stone quarries and coal-mines, Pop. about 6800.

Herbelot de Molainville. Barthelemy d'

has stone quarries and about 6800.

Herbelot de Molainville, Barthelemy d' (1825-95), Fr. Orientalist, b. in l'arris, Ho was educated at the univ. of Paris, and made a special study of Oriental languages. He visited Italy to continue his guages. He visited traily to continue as work, but returned to France and became secretary and interpreter of E. languages to the king. In 1692 he became prof. of Syriac in the Collège de France. His Hibliothèque orientale, ou Dictionnaire universel contenant tout ce qui regarde la sonnoissance des Peuples de l'Orient (1697) is based on the Arabic dictionary of Hedii Khalfa. Hadji Khalfa.

Haddi Khana.
Herbert, name of a family prominent in Brit. hist., who came over to England with the Conqueror (1066). II. Fitz-Herbert (II. of Winchester) was chamberlain and treasurer to Henry I. (1100-35).

in view of the contradictions they are seen | England, Wales, and Ireland. The earls to involve; but that these forms are of Carnaryon are descended from the reiven' to us as truly as sensations are, eighth earl of Pembroke (1656-1733), who held office under Anne.

Herbert, Alan Patrick, Sir (b. 1890), Eng. poet and politician; son of an official of the India Office; educated at Winchester the India Office; educated at Winchestor and New College, Oxford. A modern Euphulst in verse and a satirist—most of his verse appears in Punch and in the Sunday Graphic. Has also written novels, the best being The Water Gypsics (1932), Trials of Topsy (1932), Topsy, M.P. (1932). Huly Deadlock (also a novel, 1934), is a prepagnitist effort singulat a prepagnitist effort singulat a prepagnitist of the state is a propagandist effort, aimed at anomalies in the law of divorce. In 1935 he was olected M.P. (Independent) for Oxford Univ. and, in 1937, greatly distinguished himself by securing the passage of an Act radically amending the divorce laws. Knighted 1945. With T. F. Dunhill, he produced a successful musical comedy. Tantity Towers (1931); and revues Eig Ben (1946). Bless the Bride (1948). Other books: See Sharker (1977) Will-Judical books: Sea Shanties (1927), Mislcuding Cases (1937), Plain Jane (1931), Less Nonsense (1944), Point of Parliament (1946).

Herbert, Edward, first Lord Herbert of Cherbury (1583-1618), philosopher, historian and diplomatist, b. at Eyton-on-Severn, near Wroxeter. He was educated at Univ. College, Oxford, and while there taught himself Fr., It., and Sp., besides gaining some proficiency in music, and becoming a good relay and force in and becoming a good rider and fencer. In 1600 he presented himself at court, and was sheriff of Montgomeryshire in 1605. In 1608 he set out on a foreign tour, and became friendly with the grand constable of France, N. de Montmorency, and Casaudon. In 1614 he joined the army of the prince of Orange as a volunteer, and stayed abroad two years, visiting the Elector Palatine and the duke of Savoy. On his return he became intimate with Donne, Carew, Ben Jonson, and Selden, all of whom held him in high esteem and encouraged him to pursue his studies, but in 1619 he was again taking part in public affairs, and was made Eng. ambas. at Paris. While holding this post he tried to bring about a permanent alliance between England and Holland, endeavoured to gain Fr. support for the Elec-tor Palatine on the outbreak of the Thirty Years' war, and suggested a marriage between Prince Charles and Henrietta Maria, but in 1621 he was recalled for quarrelling with De Luynes. He was created Lord Herbert of Cherbury in 1629, and in 1632 a member of the council of war, being reappointed in 1837. He aimed at neutrality during the Civil war, but was forced to admit the parl force into Montgomery in 1644. H.'s philosophical Montgomery in 1044. H.'s philosophical work, De Veritate, is important as being the earliest purely metaphysical treatise written by an Englishman, and is interesting for its theory of perception. He makes the mind consist of faculties which have reducible to found expert of which the lain and treasurer to Henry I. (1100-35). Montgomery in 1644. H.'s philosophical The first curl of Pembroke (created 1468) work, De Veritate, is important as being two sa a member of this family, and the title was revived for Sir W. Herbert (c. 1501- 1570) in 1551. The fourth carl became also earl of Montgomery (1605). Some generations later the H. family diverged into sev. distinct branches, including the lines of the earls of Powis, of the Lords H. Aristotelian voic), the other three being of Cherbury, of the H. of Muckross (Kerry, Ireland), and of sev. untitled branches in

(1645), and completed his religious views | in De Religione Gentilium, pub. in 1663 (Eng. trans. 1709). He makes all religions, Christian and pagan, resolvable into the five innate ideas, that there is a God, that He ought to be worshipped, that virtue and picty are essential to worship, that man ought to repent of his sins, and that there are rewards and punishments in a future life. H.'s Poems were pub. in 1665, and reprinted in 1881; his historical work, The Life of Henry VIII., appeared in 1649. Herbert, George Edward Stanbope

Molyneux and Henry Howard Molyneux,

see CARNARVON, EARLS OF.

Herbert, George (1593-1633), divine and poet, vounger brother of Lord Herbert of Cherbury, b. at Montgomery Castle in Wales. He was educated at Westminster and Trinity College, Cambridge where he was made a fellow in 1615. In 1618 he was prelector in the rhetoric school at



GEORGE HERBERT

Cambridge, becoming in 1619 public orator, and in that capacity drew the notice of King James by his Lat. vorses-eulogising the king's Basilaon Doron; and for a time he tollowed the court and made many distinguished friends. But the death of the king and of his patrons, the duke of Richard and the macaness. enlogising the king's Basilaon Doron; of the Civil war he adhered to the side of and for a time he followed the court and made many distinguished friends. But the death of the king and of his patrons, the duke of Richmond and the marquess of Hamilton, ended his clanaces of court performent. He was, however, easily persuaded to adopt the religious life in 1626 by Ferrar, and was ordained priest in 1630 and received the living of Bemerican, Wiltshire. Here he wrote his sacred poems, afterwards pub. by Ferrar, The Temple; Sacred Poems and Private Ejaculations (1633), which were read by Charles I. in prison, and much praised by Henry Yaughan, Baxtor, Coleridge, and Crashaw. H. gave the Anglean Church the finest expression in verse, and on that account is a treasured Eng. heritago. He has not always been given that representative position, and the high regard in

which he was held in the seventeenth century waned early in the eighteenth, and for a century or more his poetry was considered uncouth. Coleridge did much to restore its favour and it has received sympathy and understanding from modern scholars. It is noted for its colloquial phraseology, pliable verse-forms and quiet music. His chief prose work, A Priest to the Temple, was first printed in his Remains (1652). H.'s poetry is sometimes said to show the influence of Donne, but said to show the influence of Donne, but whereas Donne, as a 'metaphysical poet,' tends to obscurity, the very simplicity of H. is the secret of his power; and where Donne's conceits are the pith of his thought those of H. are mostly illustrations of a thought which really require none. Donne, too, was a rebel against klizabethan literary fashions, H. was an adherent to them—as is shown by the fact that The Temple contains many cuphulans and diagrammatic conceits, besides a number of souncts. See The Works of George Herbert, ed. by F. E. Hutchinson (1941), who has restored the text of both the Eng. and Lat. poems to their original state.

state.
Herbert, Sydney, first Lord Herbert of Lea (1810-61), Eng. statesman, b. at Richmond. In 1832 he was Conservative member in the House of Commons for the S. div. of Wiltshire, and made his first speech in 1831, when he seconded Estcourt's amendment to Wood's Bill for admitting dissenters to the univs. He held say appointments under Peel, and admitting dissenters to the univs. He held sev. appointments under Peel, and in 1815 was transferred to the office of secretary for war, with a seat in the cabinet. In 1852 he again held this position under Lord Aberdeen, and became Colonial Secretary in 1855. He was responsible for the War Office during the Crimean War, and took a leading part in the movement for armfy reform after the war. He was also interested in the hospitals at Scutari, and it was he who sent out Florence Nightingale. In 1859 he was again secretary for war under

sent out Florence Nightingale. In 1859 ho was again secretary for war under Lord Palmerston, and in 1860 was made Baron Herbert, Sir Thomas (1606-82), Eng. traveller and author, b. at York. In 1628 went to Persia with Sir Doldmore Cotton and Sir Robert Shirley. On the outbreak of the Civil war he adhered to the side of the mand Sir Mandella and Sir Washington and Sir Robert Shirley.

producing some thirty-five. His best works are Woodland Fancies, an orchestral and teander (op. 33), first performed by the New York Philharmonic Orchestra in 1902. His best light operas are The Wisard of the Nule (1895), and The Idol's

Wisard of the Nile (1895), and The Idol's Eye (1897).

Herberton, th. in Cardwell co., Queensland, Australia, is 50 m. S.W. of Cairus. It is an important mining centre; thn. gold, silver, lead, and copper are found in the dist. Pop. 3000.

Herbertshohe, settlement on Blanche Bay, N.E. of Neu Ponmern, the seat of gov. of the Bismarck Archipelago, the Ger. Solomon Is. and Ger. New Guinca until 1909; administered since 1920 by the Commonwealth of Australia. The the Commonwealth of Australia. chief products are tobacco, cotton, coffee, Pop. about 1200.

Herbivora, name applied, because of their exclusively herbivorous diet, to the marsupials, contained in the sub-order Diprotodontia; kanguroos, wallabies, etc.,

Inprotodonta; kangarous, wananes, etc., are typical examples.

Herbs are plants with soft, succulent stems that wither away after flowering, leaving no woody or per-latent growth above ground, but may also include plants of which the leaves shout. Sowers or solve ground, but may also in that plant of which the leaves, shoots, flowers or seeds are used for food, flovouring, medicine, or perfume. Cultural requirements are simple, chiefly a sunny site and a wolldrained, medium-rich soil. Garden II. are usually raised for culinary purposes. are usualy raised for cumuary purposes. Angelica, anise, borage, caraway, chervil, coriander, dill, fennel, sweet murjoram, parsley, purstane, summer savory, sorrel, sweet basil, sweet cicely, and rampion are raised from spring-sown seed. Lialm, chires, lovage, pot marjoram, pennyroyal, conves, lovely, pot marjoram, pennyroyan, rosemary, horehound, hysson, lavender, mint, rue, sage, winter savory, southernwood, tansy, tarragon, and thyme may be propagated by cuttings or root div. Many H. have salad uses. H. for drying are hardvested just as flowering begins, and dried quickly in shade, hung downwards in a current of air. Seeds are harvested when ripened. Pot-H. is a term usually applied ripened. Pot H. Na term usuam appired to vegetables such as carrots, tunips, etc., cut up and mixed with flavouring herbs for soups, etc. Medicinal H. Such as for glove and deadly nightshade, and scented H. such as lavender and south rinwood, the such as lavender and south rinwood, the such as lavender and south rinwood. are grown commercially on herb farms. A careful choice of site and soil, skill in culture and harvesting, and good marketing are essentials of success.

Herbs, Medicinal, see MEDICINAL. Hercegnovi, or Castelnuova, chief tourist place in the romantic ford of Boka Kotorska, Yugoslavia, with medieval monuments and rich Mediterranean flora.

Pop. 1500.

Herculaneum, anct. city of Italy, situated at the foot of the W. slope of Mt. ster at the root of the we stope of the vesseling, close to the Portici Station, a short distance from Naples. The visible ruins are not so well-known as Pompeii, being much smaller in extent and less visited. The city was probably founded by the Oscans, and it appears to have belonged to the Etruscans, and during the Sample wars became Rom. According to

Soneca, it suffered from a severe earth-quake in A.D. 63, and Pliny the Younger describes how it was destroyed by the terrible cruption of Mt. Vesuvius in 79. The city was then entirely buried under showers of ashes, stones, and streams of lava; few, if any, people could have escaped. Its very name was forgotten in the Middle Ages. In 1719, Prince Elbeuf discovered the anct, site by acci-dent in a source for pushe for the ville. Seneca, it suffered from a severe earthherein discovered too anct, site by accident, in a search for marble for the villa he was building at Portici; he learned from the peasants that there were pits quite close from which they obtained marble and had also extracted many statues. Excavations began on a small scale: Excavations organ on a small scale; the theatre, many houses, the forum, and the basilica were discovered, with valuable and beautiful statues and painting; in the Villa suburbana, a number of bronze and marble busts and statues, and especially a library of valuable papyri, containing works by Epicurus, Philodenus, etc. Anong the most famous statues rescued from the runs are the reposing Hermes, the drunken Silenus, and a pair of wrestlers or runners; these were all in black bronze, and are now in the Naples Museum. II., as we know, not only from the works of art discovered, but also from contemporary sources, was inhabited by a more cultured, refined, and intellectual class than the neighbouring to of Pompeis (q.v.). Verrly the whole site of the city is occupied by the in. of ite-ina, and, therefore, it is difficult to even to; also, owing to financial trouble excurate; also, owing to linancial trouble with the property owners, the proposals for systematic excavation, begun 1908, were temporarily stopped. Further operations, in which muchinery for breaking up the hard crust is employed, were undertaken in 1927-30. H. sustained no damage in the recent World War. See C. Waldstein, and L. Shoobridge, Herculaneum, Barten and krature 1908. stem, and L. Shoobridge, Her. Past. Present, and Future, 1908.

Herculano de Carvalho y Avarijo, Alexandre (1810-77), Portuguese poet and historian, b. at Lisbon. Ho was educated for a commercial career, but had to leave for a commercial career, but had to leave Portugal in 1831, when the country was under the despotic ruler Dom Miguel. In 1832 he pub. A Voz de Propheta, and in 1831 J. Harpa do Crente, in which he describes the bitterness of extle, etc., proving himself to be a poet of feeling. In 1837 he founded the Panorama, in imitation of the Eng. Penny Magazine. This paper had a wide circulation, and II.'s articles were very popular with the middle class. In 1841 he started a new venture, and wrote historical novels in imitation of Sir Walter Scott, viz. Enrico venture, and wrote historical noves in mutation of Sir Walter Scott, viz. Enrico (1888), and Monge de Cister, but his greatest work was his History of Portugal from the Beginning of the Monarchy to the end of the Reign of Alfonso III. (1846-68). This book was regarded as a historical work of the first rank, and is still reckoned aroung the Portugalse algasics. See life

work of the first rank, and is still reckoned anong the Portuguése classics. See life by V. Nemerio, 1934, Hercules, son of Alexander the Great and Barsine, the widow of Memnon. He lived at Pergamus, and in 310 B.C. was brought forward by Polysperchon (a dis-tinguished officer of Alexander the Great,

who had been appointed in 319, on the against Troy and killed Laomedon, dedeath of Antipater, regent, and guardian feated the Meropes and killed Eurypylus, who had been appointed in 18, on the death of Antipater, regent, and guardian of the king) as clumant to the Macedonian throne. He was, however, murdered by Polysperchon in 309, when the latter became reconciled to Cassander.

Hercules or Heracles ('Πρακλή,), most celebrated of all the heroes of antiquity, was the son of Zeus by Alcmene of Thebes in Bœotia. His stepfather was Amphitryon, who was the son of Alcaus, the son tryon, who was the son of Alexans, the son of Perseus; and Alemene was a grand-daughter of Perseus. Hence II. belonged to the family of Perseus. On the day destined for the birth of H. Zeus boasted that a son was going to be born to him who should who compatible to the company of the perseus. who should rule over the house of Perseus, whereupou Hera, having exacted from him a promise that the descendant of Perseus b. that day should be ruler, hastened to Argus, and caused the wife of Sthenelus (son of Perseus) to give birth to Strengthens, and delayed the birth of H. by keeping away the lithyar, and so robbed H. of his empire. All the stories told of the hero point to the fact that he was strong from his birth, and under the protection of Zeus and Athena he escaped the dangers prepared for him by Hera, e.g. he strangled two serpents sent to destroy him in his cradle. As he grew up, he received instruction in music, wrestling, archery, etc., but happening one day to kill Linus who tought him the lyre, he was sent by his rather imphitryon to tend his cattle. While thus employed, he made further exhibition of his strength by killing a huge lion which haunted Mt. Citharon, and did great damage both to his father's flocks and to those of the king of Thespise. His next adventure occurred on his way back to Thebes, when he met the envoys of Erginus going to demand their ann. tribute of 100 oxen from the Thebans. Cutting off the noses and expensions. of the envoys, he sent them back to Erginus, who immediately made war on Thebes; but II. defeated and killed Erginus, and was rewarded by the king of Thebes with the hund of his daughter Megara. Soon after this he is said to Megara. have paid a visit to Delphi to consult the oracle, and being told by the Pythian to serve Eurystheus for twelve years, went to Tiryus and carried out the injunctions laid upon him. He strangled the Nemean lion, fought the Lernman hydra, captured the Arcadian stag, hunted the Eryman-thian boar, cleansed the stables of Augens, king of Elis, destroyed the Stymphalian birds, captured the Crotan bull, captured and subdued the mares of the Thracian Diomedes, seized the girdle of the queen of the Amazons, captured the oxen of Geryon in Erythia, tetched the golden apples of the Hesperides, and brought Cerberus from the lower world. When he had performed these twelve labours, he returned to Thebes, where he sought lole, the daughter of Eurytus in marriage, but having in a fit of madnoss slain his friend Iphitus (the son of Eurytus), he was commanded by the oracle to serve three years for wages and give his earnings to Eurytus, and so entered the service of Omphale, queen of Lydia. After this he sailed

and helped the gods in their fight against the giants. He also proceeded against Pylos and Lacedemon, and then journeyed to Calydon, where he married Delanira, after fighting with Achelous for her. subsequently he settled at Tractus and narchod against Eurytus, whom he killed, and carried off Iole as prisoner. This caused Dejanira to be jealous, so she sent a shirt to her husband steeped in the blood of Nessua the centaur, hoping to restore had been poisoned by the arrow with which H. had shot Nessus; and so as soon as H. put on the garment the poison entered his body and caused him extreme He tried to tear off the shirt, but agony. was unable to do so, and was brought to Tractus in a dying state. When Deianira saw what she had done, she hanged horolf; and H. seeing no remedy for his misortune, placed himself on a funeral pyre on Mt. Ceta, and ordered it to be set pyre on Mt. Eta, and ordered it to be set on fire. When it was burning, a cloud came from heaven, and carried hm to Olympus, where he became a god and married Hobe. Sophocles's Trachinics give some account of H. and Deianira. Eurpides wrote two plays on H.—Mail Heracles, in which H., driven mad through the machinations of Hera, murders his children and wife; and Heracles, in which Theseus comes to the recue of H. in his fall (on these see G. Murray, Euripides and his Age, 1913).

Heroules, Pillars of (Herculus Columna), name given to the twin rocks (Lalpe (in the N.) and Abyla (on the opposite coast).

\.) and Abyla (on the opposite coast). which guard the entrance to the Meditertanean at the E. extremity of the Straits of Gibraltar. According to Pliny and Strabo, Hercules tore asunder the rocks which had before entirely divided the Mediterranean Sea from the ocean. Another legend asserts that he forced the two rocks into temporary union to make a bridge for the safe conveyance of the herds of Geryon to Libya, and another that he narrowed the strait so as to shut out the their way in from the occun and infested

the Mediterranean.

Hercules-beetle, popular name of Dynales hercules, a species of lamellicorn Coleoptera, belonging to the family carabuidie; they inhabit tropical Amera t, and the male meet is remarkable for the possession of a pair of large unequal norns, resembling pincers. Son male beetles reach a size of 6 in. Some of the

Heroules' Club, or Aralia spinosa, pecies of Arabacea, found in the W. Indies. The tree is closely allied to A. transeng, from which the drug ginseng is

obtained.

Hercynian Forest, name used in anct. times to signify the wooded nit. region N. of the lower and middle Danube, and ounetimes to include the whole region from the Black Forest to the Sudetes. Later, it became a general designation for the entire wooded, mt. ranges of middle Germany from the Rhine to the Car-pathian Mts. Herezeg, Francis, Hungarian author, b. in 1863 in S. Hungary. Descended from a long line of Gers. settled in the dist. called the Bacska, and his father was mayor of a tn. there. He is recognised as one of the masters of Hungarian literary style. His historical romanoe, The Pagans (1901), dealing with the conversion of the unbelievers in the eleventh century, and The Gate of Lije (1919), a study of Hungary in Renaissance times, are his best works. See J. Horvith, Herczeg Ferenc, 1925; M. Rubiny, Herczeg Ferenc, 1926; J. Gassner, Masters of the Drama, 1940.

Herd, David (1732-1810), Scottish author, b. in Marykirk, Kincardineshire. He spent most of his time in Edinburgh, and was president of the Cape Club, a literary association which had many dis-tinguished members. He is praised both by Scott and Archibald Constable. who acknowledges numerous obligations to him, but his fame rests on his pub. of Ancient and Modern Scottish Songs, Ancient and Modern Scottish Songs, Heroic Ballads, etc., collected from Memory, Tradition, and Ancient Authors (2 vols.,

1776).

Herdecke, tn. in the prov. of West-phalia, Germany, 16 m. S.S.E. of Dort-mund, on the Ruhr. It has considerable riv. trade and sandstone quarries.

6000.

Herder, Johann Gottfried von (1744-1803), Ger. critic and poet, b. at Mohrun-gen in E. Prussia. He was educated at the grammar school of his native tn. and at the univ. of Konigsberg, where he met Kant and Hamann. At an early age he began to write verses, and his first pub. works were occasional poems and reviews contributed to the Koniysbergische Zeitung. In 1761 he became a teacher at the cathedral school at Riga, and a few years later assistant pastor, and in 1767 pub. Fragmente über die neuere deutsche Literatur, in which he maintains that the truest poetry is the poetry of the people, and ridicules the ambition of Ger. writers to be classic. In 1769 he went to Strasburg, where he met Goethe, and in 1771 became court preacher at Buckburg. During this period he became one of the leaders of the new 'Sturm und Drang' movement, and pub. a jour, with others including Goethe, to diffuse the new ideas. In 1776 Goethe, to diffuse the new ideas. In 1776 he became court preacher at Weinnar, and while in this city pub. Stimmen der Völker in Liedern, an admirable collection of folksongs (1778-79); a celebrated work on Heb. poetry. Vom Geist der hebräischen Poesie (1782-83, trans. 1833), and his masterpiece, Ideen zur Philosophie der Geschichte der Menschiett (1781-91, trans. 1880). Which props II. to he an evolu-1880), which proves H. to be an evolu-tionist after the manner of Leibnitz.

the centre of an agric, and coffee-growing dist. Pop. (prov.) 55,100; (town) 10,500. Heredia, José Maria de (1842–1905), Fr.

poet, b. near Santiago de (1842-1903), Fr. poet, b. near Santiago de Cuba of a Fr. mother and claiming descent from the old conquistadores, he migrated to France at an early age. He was educated at Soulis and Havana, but finally went to the Ecole des Chartes in Paris, and made france his home. He was a member of the new school known as Parnassiens, who regarded form as being of supreme importance, and his poems, Les Trophées, pub. in 1893, and composed almost entirely of exquisitely fashioned almost entirely of exquisitely fashioned sonnets, prove him to have been a powerful word artist, as well us a master of the art of verse. If somewhat cold in their formal beauty, the craftsmanship of the Trophées is such as to rank H. among the foremost sonnet writers, not only of France, but of the world. In 1894 he was elected to the Academy, and in 1901 became librarian of the Bibliotheque de Parsénal at Paris. His other works are a trans. of Diaz del Castillo's History of the Conquest of New Spain (1878-81); and a trans, of the life of the nun Alferez (1894), or De Quincey's Spainish Military or De Quincey's Spainish Military. (1894), or De Quincey's Spanish Military Aun.

Hereditaments, term in Eng. law, meaning property which, unless devised by will or disposed of by the owner in his lifetime must descend to his heir (q.r.). II, are practically synonymous with land, and are divided into corporeal, i.e. interests in land in possession, or which confer the present right to enjoy the land either personally or through tenants, and incorporeal, i.e. rights subsisting in or over lands in the possession of another, such as reversionary and contingent interests (see REMAINDERMEN, REVERSIONERS), or rights of way, or other cascinents. The term also includes heirlooms, and such turniture or chattels as by custom descend to the heir and not as personalty. See also INHERITANCE.

Heredity may be defined as the genetic relationship between parent and offspring. Though the study of H. as a science was known to the Gks., and Hippocrates in the fifth century pub. a theory of H., no great progress was made until the end of the nineteenth century. Its practical importance to human beings, both in their personal lives and in plant and animal breeding has led to considerable interest in H., and to the collection of a large number of observations requiring careful examination and confirmation before they can be adduced as scientific evidence in support of any theory of H. Such familiar expressions as 'Like begets like 'and 'A chip of the old block 'show that the inheritance of similar characteristics has tionist after the manner of Leibnitz. Other works of his are: Kritische Walder (1769), Planik (1778), and Über den Ursprung der Sprache (1772), a work on language. His books have been cd. by B. Suphan (1877-87). See R. Haym, Herder nach Leben und Werken, 1877-85; H. Nevinson, Herder and his Times, 1884. Heredia, in. and cap. of the prov. of H., Costa Rica, 5 m. W. of San José. It is well situated (altitude 3786 ft.), and is

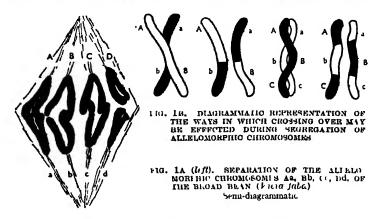
resulting in the production of a new organism. Amongst higher animals and organism. Amongst higher animais and plants soxual reproduction is almost universal, and this consists in the union of two cells or gametes (Ok. γαμέτης, spouse), that of the female heing the egg cell or ovum, and of the male animal the spermatozoon. In flowering plants the male gamete is usually a nucleus, with a little accompanying extenders. little accompanying cytoplasm, formed in the pollen grain and conveyed by the pollen tube to the egg cell. Free swim ming male gametes of plants such as occur for instance in ferns and in mosses are termed spermatozoids. Both gametes are microscopic, and the male is usually very much smaller than the ovum, consisting mainly of nucleus with an almost negligible amount of cytoplesin. The female gamete has a nucleus, and in most cases a relatively large quantity of cytoplasm in which food may be stored. Owing to the deposition of food around or Owing to the deposition of tood around or to one side of the own, the eggs of oviparous animals are of appreciable size. Fortilisation consists in the union of the male and female gametes; the fertilised egg-cell is the beginning of the next generation, and contains all the potentialities of the new individual. Unless fertilisation has taken place, the own is small attached to adopt the adult of the adult usually unable to develop into the adult

organism.
The ries lity.—Lamarck (1809) formulated some taws of inheritance and stressed the importance of the transmission of useful characteristics. He claimed that useful variations were more likely to be inherited than useless ones, and, according to his theory, useful characteristics acquired during the lifetime of an organism could be transmitted to offspring. The possibility of the inheritance of such 'acquired' characteristics will be discussed later. Darwin accepted Lamarck's theory, and suggested that inheritance was effected by nangenesis—that is, by the accumulation in the germ cells of pangens, small particles of each of the different types of body cells. Thus body cells modified by the environment could sond particles to the germ cells and the modification would be transmitted. formulated some taws of inheritance and the modification would be transmitted. The germ cells of human beings would, on this hy pothesis, contain particles from kidneys, liver and every discestive organ, hair, eyes, bones, lungs, various nurceles, and every different kind of body cell, so that the number of particles to be included renders the theory highly improbable, and the uncring passage of these particles to the germ cells presents further difficulty. Weismann seems to have been the first biologist to consider experimental evidence essential to the foundation of a theory of II., and, in 1888, as a result of his observations on the embryology of some of the higher animals, the modification would be transmitted.

terata, and in many plants, Weismann believed that a small amount of germ plasm accompanied at least some of the body cells. In this way he accounted for asexual reproduction and for the inheritance of a somatic modification by, for example, a plant propagated by a cutting from the modified part. Except in so far a all cells are pitimately derived from the as all cells are ultimately derived from the div. of a single cell and so retain indirect continuity, there is little evidence that the germ cells of most plants or of many the germ cells of most plants or or many animals are directly continuous from generation to generation. Moreover, re-cent research has shown that body cells not too highly differentiated may become dedifferentiated and function as germ cells, so that there is no absolute distinction between body- and germ-plasm. Weismann made a greater contribution to the study of H. by his theory that the nuclear chromatin was composed of minute particles, the determinants, each of which was responsible for the production of a characteristic of the individual. The nucleus (q.v.) is now generally recognised as playing a very important role in H., and the theory of the nucleus as the physical mechanism of transmission of physical mechanism of transmission of hereditary characteristics is based on a large number of observations of H. in plants and animals. A few of the main arguments in support of the theory are given here. (1) The nucleus of any given species of plant or animal consists of a constant number of chromosomes (see CELL). Although these appear in nuclear div. and atterwards apparently lose their identity when the nuclei are reconstituted, as soon as div. is about to occur again, the same number of chromosomes is formed. Very occasionally the number may be changed by the loss or addition of a chromosome owing to irregularities in div., chromosome owing to irregulatities in div., but such a change is accompanied by a change in the characteristics of the organism. Moreover, many of these chromosomes have a distinctive form: 0, X, J, and V shaped chromosomes are common, and reappear again and again in subsequent divs. There is therefore reason to believe that the chromosomes retain their believe that the chromosomes retain their identity throughout the natural nuclear phases. (2) The number of chromosomes, though large in some species of plants and animals, is always less than the number of characteristics possessed by an organ-ism. Consequently, if the nucleus be the mechanism for the transmission, each chromosome must bear the determinants probable, and the unerring passage of these particles to the germ cells present in any single chromosome will be transfurther difficulty. Wesmann seems to have been the first biologist to consider experimental evidence essential to the foundation of a theory of II., and, in 1888, as a result of his observations on the embryology of some of the higher animals, strongly dealed the inheritance of action characteristics. In the animals he investigated, he discovered that the germ cells, i.e. the coils eventually giving reducing 'nuclear div. takes place, so rise to gametes, were absolutely distinct from the body cells and were continuous characteristics. In the lower animals, the Protozoa and Coelenof sev. characteristics, and all those present

doubling during every fertilisation; secondly, it provides a mechanism for the secondly, it provides a mechanism for the assortment of groups of churacteristics, and thirdly, for the segregation, demonstrated experimentally by Mendel, of alternative characteristics (see Mendel, of alternative characteristics (see Mendel, This segregation will be discussed in the following section on types of inheritance. For the explanation of the assortment, we must consider the reducing div. When this is about to occur, the chromosomes arrange themselves in pairs and one member of each pair passes into the

the diploid number. The significance in less cytopiasm than the egg cell, it was H. of this reducing div. is threefold, first considered that the cytoplasm could first, by means of it the number of play no part in the determination of chromosomes, and inferentially of characteristics. Experiments in which teristics, is kept constant invited of development of an enucleated egg cell has depulsive development of an enucleated egg cell has characteristics. Experiments in which development of an enucleated egg cell has been initiated by the entry of a spern have, however, resulted in the production of larvar resembling the mother, and consequently the influence of the cytoplasm cannot be disregarded. It has been suggested that before or during the enucleation some emanations from nucleus into evtoplasm took place, but this has not been proved. Objections to the nuclear theory also occur in connection with the inheritance of sex. Morgan and Bridges were led by breeding experiments with the vinegar fly, Drosophila, to expect a



daughter nuclei. If we consider only two pairs (Figs. 1A, 1B) Aa and bB, A passes into one daughter nucleus, a to the other; A may pass into the same nucleus as B or as b and in this way may arise differences between gametes of the same If we consider only two parent. When sev. Chromosomes are present, it is clear that a very great number of different combinations may occur added by 'crossing over' between parts of allelomorphic chromosomes, as represented in Fig. 1B. The thromosomes of a pair are alternative or allelomorphic. There is considerable experimental (vidence to form a basis for the view that the allelomorphs are derived one from each parent and bear determinants of the same characteristic. For instance if a chromosome bear the determinant for eve colour, its allelomorph will also bear a determinant for eye colour, but not necessarily for the same one. This will be demonstrated in the discussion of experimental work. Although for these and other reasons the pucieus provides an admirable mechanism for the transn soion of hereditary characteristics, it cannot in all cases be regarded as the sole mechanism. Since inheritance

difference in the chromosomes of the male and temale, and examination of the nuclei showed two similar chromosomes, subsequently termed A-chromosomes, in the female. In the male the allelomorph of the X-chromes mes was a chromosome of different form, the V-chromosome. The other pairs of chromosomes of both soxes were similar, and distinguished as 'autosomes,' from the X and Y, or sex chromosomes, sev. other animals have been tound to possess sev chromosomes, though the numbers of these vary, and the male may have more or fewer than the temale or may have the same number. Most or may have the same number one sex investigators believe man to have one sex chromosome and woman two. The females of some species of insects have two equal sox chromosomes and the main two unequal ones, and by other species the reverse is the case. It has, however, recently been shown that an insect may have the chromosome constitution of a formals or of a male and yet be an intersex or even of the reverse sex. In some cases hormones (q.v.) are assumed to effect complete or partial sex reversal; in a choracter of different as the sole mechanism. Since inheritance others, the sex chromosomes of different from both parents is approximately equal parents have been shown to have different and the male gamete has usually much values, so that in some combinations as chromosome that should determine maleness, for example, is feebler than its allelomorph, an intersex or female resulting according to the difference in influence exerted by the two chromosomes. Thus exerted by the two chromosomes. Thus the presence of the sex chromosomes is bred true. The yellow-second plants were insufficient in itself to determine the sex of the animal. On account of the circumstance of two kinds, One third of them produced in successive generations only the cytologom and of hormoners, the yellow seeds: the remainder produced the cytoplasm and of hormones, the nucleus cannot be regarded as the sole agent effecting the transmission of hereditary characteristics, but it undoubtedly plays a great part in H. Morgan introduced the conception of the gene as the physical

yellow seeds: the remainder produced plants of both kinds. The plants breeding true were described as pure or homozygous for seed colour; the others were impure or heterozygous, and contained the determinants of both colour. From determinant of a characteristic. He con-siders that paired elements, the genes, linked together in a number of groups, thou of the determinants took place, so

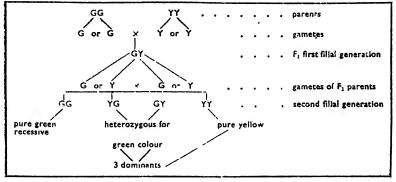


FIG. 2

Diagram showing results of Mendel's experiments in hydridisation with pure sicen and yellow seeded plants of the common field pea-

determine the characteristics of an organ-A single characteristic may be due to the interaction of a number of genes which are to be regarded as biological elements. Morgan's theory is based on two types of experimental work, the genetic results obtained by breeding many generations of Drosophila under carefully controlled conditions, and the cytological examination of germ cells of these insects.

Types of Inheritance .- Since the current Types of finarrance.—Since the current theories of finare based on the results of experimental work, it is necessary to mention briefly the nature of this work. Johann Gregor Mendel, of Bruun, seems to have been the first investigator to consider experiments according to the constitution of the constituti consider quantitative experiments neces-sary in the study of H., and in 1866 pub. the results of his experiments in hybridisation (see MENDEL). He selected wellmarked, easily recognisable differentiating characteristics of the field pea for observation, and collected results separately for

that a gamete contained the determinant on only one of a par of sitemative characteristics, i.e. one allelomorph only could be present. This soften called Mendel's law of the purity of the gametes. After fertilisation, the two allelomorphs, one from each gamete, came together and were segregated again before the new cametes were formed. Thus if G, Y (Fig. 2) be the determinants of green and yellow 2) so the accommunits of green and yellow colour respectively, a pure green-secded plant would have allele morphs G.G; a pure yellow-seeded. Y, Y, and a hybrid plant G.Y. The genetic would contain either G or Y, but not both. If the purents selected for the hybridisation experiments were pure green and pure yellow, the table in Fig. 2 would represent the results. the results.

Thus the probability of the production of a pure yellow or of a pure green seeded parent is one in four. The yellow colour is said to be dominant and the green recessive. In all cases studied by each pair of characteristics chosen. For recessive. In all cases studied by example, Mendel crossed tiowers of plants it is seeded plants. All the offspring, constituting the first fillal or F, generation, produced yellow seeds. When such plants were intercrossed, some of their quently described as Mendelian, and was quent experiments have shown that complete dominance is not an essential of Mendelian inheritance. The offspring of black Andalusian birds crossed with splashed white ones are blue, and these complete dominance is not an escontial of explanation of results. In any species Mendelian inheritance. The offspring of black Andalusian birds crossed with splashed white ones are blue, and these blue Andalusians, intercrossed, produce the mately equal numbers, so that the sex blue Andalusians, intercrossed, produce ratio, i.e. the ratio of males to females, black, blue, and splashed white birds is 1:1. The transmission of certain

independently discovered by Bateson, tion, and the 'Presence and Absence' Correns, and de Vries thirty-four years hypothesis has been almost completely after the pub. of Mendel's results. Subsequently abandoned, being retained in only very abandoned, being retained in only very few cases where it provides the simplest

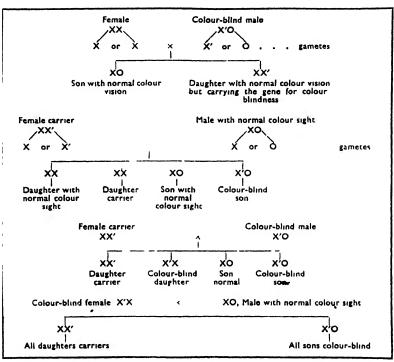


FIG. 3. DIAGRAM SHOWING INHERITANCE OF SEX-LINKED CHARACTERISTICS

respectively in the Mendeliau ratio 1:2:1 Thus the two allelomorphs, the genes for black and white, interact, producing an intermediate characteristic, 'blue.' The assumption that complete dominance was assumption that complete dominance was essential led to the explanation of Mendelian inheritance by the 'Presence and Absence' hypothesis. According to this dominance is due to the presence of the genes determining a characteristic, whereas the recessive (ondition is due to their absence. In the experiment with Anda-lusian fowls, however, the colour of the hybrids can be explained only on the assumption that the presence of a deter-minant of the recessive characteristic has modified that of the dominant one. Sev. other experiments support this assump-

characteristics is associated with the sex of the parent, and these are termed sex-linked characteristics. The best-known examples of these in man blindness and hemophilia. man are colour-lia. The sons of a colour-blind woman and a man with normal colour vision are all colour-blind; the daughters all have normal colour vision, but carry the gene for colour-blindness as a recessive. If one of these bilindness as a recessive. If one of these daughters marries a colour-blind man, half the sons and half the daughters will be colour-blind, but if the father has normal colour vision, half the sons will be colour-blind and half the daughters will carry the gone for colour-blindness. This and similar phenomena of sex-linkage may be explained by supposing that the sex

chromosomes carry other genes in need special statistical treatment. Galton addition to those determining the sex of funded this biometrical study, and Pearthe to organism. If XX (Fig. 3) represent son and Weldon have been its leading the two sex chromosomes of woman, each exponents. There are only three possings cell will contain a single X; and if X better the contain the sex of the contain either X or O. If X represent the sex chromosomes are a sext. If X' represent the sex chromosome carrying the gene for colour-blindness, the table will show at a glance the mode of inherit-

From this it is obvious that sex-linked characteristics are not inherited in the Mendellan ratio. Similarly the ratio cannot hold for groups of characteristics determined by any other single chromosome. In any case, however, it must be remembered that the ratios given by theory may be disturbed or never be realised for all the care of the calls realised, for all the egg cells and sperms do not unite at the same time, so that, for instance, those spermatzoa with the X-chromosome might never succeed in fertilising an egg cell, and all the children would then be sons. However, when large numbers of individuals are constanted the results work out according to sidered, the results work out according to the law of probability, and then the Mondelian ratio, the sex ratio, and other ratios deduced theoretically from a knowledge of the genetic constitution, are realised. Mondel himself investigated over one thousand plants, and other inover one thousand plants, and other investigators have sinc, worked with tens of thousands. Another phenomenon disturbing the theoretical ratio is that of 'crossing over.' This is a phenomenon in which the linkage of genes is broken and an exchange takes place between allelomorphic groups of genes. The diagrams show how this may be effected during the soparation of allelomorphic chromosomes very closely associated chromosomes very closely before segregation takes place. associated

Variation.-Variation must be mentioned here, for evolution is dependent on the inheritance of variations. In a discussion of variation and H. the following questions arise for consideration. What is inherited? Are variations themselves transmissible, or is the power to vary inherent and the actual variation due to environment? For an account of modes of variation, see Variation. Darwin believed continuous variations were inherited and eventually gave rise to new species. This theory, however, awaits biometrical proof, for the process is so slow that it is practically impossible to obtain experimental proof. Discontinuous variations occur in nature, and undoubtedly give rise to new species, but their cause is unknown. The transmission of mutations places the doctrine of common descent on a much firmer foundation than it could otherwise hold. The inheritance of modifications due to the environment is still a disputed question, but what indisputably is transmitted

characteristic, viz. two pure types and the hybrid, though attempts have been made from time to time, with but little success, to classify kinds of inheritance. Notwithstanding this, it is possible to determine arrange degrees of resemblance between parent and offspring. The usual elementary example of this is the relation between statures of sons and fathers, and in this a smoothed graph is drawn, which in this a smoothed graph is drawn, which shows the mean statures of sons from fathers of varying but classified heights: e.g. Pearson and Lee after an investigation of some thousands of individuals dis-covered that the average height of son-

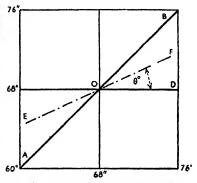


DIAGRAM SHOWING DEGREE OF RESEMBLANCE BETWEEN STATURES OF FATHERS AND SONS

Vertical, son's stature; horizontal, father's statute Tan θ = coefficient of correlation

from a group of 62-in, fathers was 65\frac{1}{2}-in.; from 65-in, fathers the sons' average was 67 in.; 68-in, fathers, 69-in, sons: 71-in, sons. Intermediate values were also determined. Now if the sons' statures be plotted on squared paper as vertical heights, and the corresponding fathers' statures be plotted as horizontal distances (see simplified distances (see simplied distances (see simplified distances (see simplified dist distances (see simplified diagram, Fig. 4), it is possible to draw a graph indicating the degree of inheritance which exists between father and son relative to stature. If the resulting graph had been a horizon-tal line as CD, it would have shown that all classes of fathers had about the same average-height son, i.e. the inheritance would have been zero. If the graph were inclined at 45° to the horizontal, as in the case of AB, it would show that each class of tother would the desired to the case of the case of the case of the case to the case to the case of the case of the case to tion, but what indisputably is transmitted is the power to vary, and it seems probable that organisms possessing this in a high degree will readily react to their environment and begin to vary early in life.

Statistical study.—Not only is H. studied by the experimental method, but important branches of the subject also lies between the horizontal and the 45°

line as, say, EF, and the steepness of this line is a measure of correlation existing between the two statutes. The actual coefficient of correlation is expressed as the tangent of the angle FOD, and in this simple graphical method is not of absolutely general application, as it assumes that variation is normal and similar in parents and offspring, and it also assumes that the graph EOF is linear; any marked bend in it would demand complicated methods of treatment. Pearson has determined a large number of such plicated methods of treatment. Preason has determined a large number of such coefficients between father and son, e.g. stature 0.51; span 0.46, forcarm 0.42, eye colour 0.50; and has suggested 0.48 as a mean value, i.e. on the average the offspring deviate from the mean about half as much as the parent does. If the second parent be also considered, the coefficient increases, though it does not equal unity. It should be remembered that statistical methods are supplementary to experimental methods, and that they apply only to populations in the mass. The co-efficient of H. does not enable the investigator to determine what will occur in any particular case, as, for example, the son of a 6-ft. father may be anything within the whole range of statanything within the whole range or statures, yet in those cases of II., too complex for Mendelian analysis, the statistical method has proved of great value. The Law of Ancestral Heredity, formulated as a result of statistical methods, is of considerable interest. Galton calculated that, on the average, half of the H. of an individual may be taken as derived from individual may be taken as derived from the two parents, one quarter from the four grandparents, and so on in the series 0.50, 0.25, 0.125, etc. Pearson has more recently given 0.6244, 0.1938, 0.0630 as the series, thus laying more stress on the parental bequest and less on the ancestral. Harris has found that there is a correlation between stature and length of leg, but no constant relation between stature and arm length, and other recent work includes the blometrical study of the inheritance of feeblenindedness by Goldard.

Disputed Questions.—One of the most vexed questions in H. is that of the francial study of the francial control of the francial contr

mission of the acquired characteristics, and some of the differences of opinion with regard to this are due to boscness of definition. According to Lamarck's theory, a modification produced during the lifetime of an organism as a result of the influence of the environment was transmitted to offspring. An acquired characteristic may therefore be defined as one—not previously known to have appeared spontaneously in the ancestry of the individual—appearing as the result of the action of the environment and persisting after the removal of the factors inducing it. Since a recessive characteristic cannot appear unless both parents bear the gene for it, sev. generations may pass before the characteristic is revealed. Other characteristics may remain latent for many generations in an unfavourable

line as, say, EF, and the steepness of this might easily be regarded as new if the line is a measure of correlation existing genetic constitution of the organism be incompletely known. Both recessive and latent characteristics are inherent in the germ cells. If the offspring be subjected to the environment inducing the change in the parent, they might equally well acquire the same modification, and some of the results adduced as undoubted inheritance of acquired characteristics may quite well be due to direct influence of environment on the offspring. Nunerous experiments have been carried out in an endeavour to discover whether acquired characteristics are transmitted, but in most cases the pedigree of the out in most cases the pengree of the animal experimented upon has been in-sufficiently known. Other experiments have not been carried out under really critical conditions and others have not been extended through a large enough number of generations to justify the conclusions drawn from them. The earlier experiments were concerned mostly with mutilations. Weismann and other investigators who cut off the tails of many generations of mice found the tails of the progeny unaffected by the experiment. Some of the most extensive experiments on mutilations were carried out on guineapigs by Brown-Sequard and his assistants. but the experiments do not warrant a definite conclusion, for they involved injury to the nerves of a parent. Many of the offspring were abnormal, but extremely few were affected in the same way as the purent, so that it seems that way as the purcht, so that it seems that a new characteristic appeared, instead of the acquired one being transmitted. Moreover, in many of the experiments there was insufficient evidence to show that the abnormalities were inherent; in all cases the greatin history was not known for a sufficiently large number of canonicians. A sufficiently large number of generations. A well-controlled scientific series of experiments was carried out by Hestop Harrison and Garrett, on three spoces of moths. By feeding these on food impregnuted with lead nitrate or with manganese sulphate, sooner or later a for black moths appeared. No black moths of these species had previously been recorded as occurring naturally. In breeding, the Mendellan ratio was ob-tained, the black pigment behaving as a recessive in two species, and as a dominant in the third, as far as the experiments went, but the third set was incomplete. Since the black colour did not appear in the parent, this cannot be considered as all example of inheritance of acquired characteristics in the Lamarckian sense of the term. A perminal change, however, must have been effected and transmitted, and some motern hologists would regard this a an example of transmission of acquired characteristics. This experiacquired characteristics. This experi-ment affords striking evidence against Weismann's theory that the germ-plasm could not be affected by the body-plasm. Kammerer's experiments on the colour change of salumanders in a changed environment and on the breeding of the midwife tond, Alvtos, in wet and dry habitaty, led him to believe that acquired environment, but neither recessive nor inidwife tond, Alvies, in wet and dry latent characteristics, when they eventually appear, are acquired, although both characteristics were transmitted, but the

experiments require confirmation. Sumner's work on the effect of temp. on mice suggests positive results; Castle's experinuggras positive results; Castle's experi-ments on guinea-pigs give direct negative results. Consequently at the present time experimental work has not yet yielded conclusive evidence in favour of the inheritance of acquired characteristics as such, but Heslop Harrison and Gar-rett's results show that environment may, through the body-plasm, act on the germ-plasm, and that germinal modifications so acquired are transmissible. On the other hand, it is difficult to account for evolution, if acquired characteristics are not inherited. The indirect evidence of paleontology is considerable, and seems to indicate that such inheritance must have occurred. Another disputed question, already discussed under theories of H., is that of the rôle of the nucleus as a mechanism for the transmission of characteristics. and of other agencies such as the cytoplasm and hormones, alding or modifying inheritance. Sex inheritance also has caused much controversy, partly on account of the apparently conflicting results count of the apparently conflicting results of different experiments, and partly because of its connection with sex determination. If sex chromosomes be the solo determinants, then the sex of the organism is determined at fertilisation, and cannot be changed. If the action of hormones, the sex termines, be able to reverse sex, it is conselvable that, whatever the nuclear constitution may be, with increased knowledge sex may in the future increased knowledge sex may in the future be determined at the will of the parents some scientists think that sex deter-Some scientists think that sex deter-mination may depend on the nutrition of the parents, but there is no conclusive evidence to support this theory. Tele-gony and maternal impression (see BREEDING) are not accepted by most scientists, but tradition dies hard amongst cattle-breeders, and so belief in these theories is still fairly widespread. Practical breeding.—One of the most

valuable applications of Mendelism is the fixing of pure types. A thorough and systematic search for the best pure lines is one of the best methods of improving these economic plants which are self-fertilised, and Nilsson and his assistants have done valuable work in Sweden in isolating the best pure varieties from the mixtures of numerous types existing in that country. In the case of the maize experiments by shull and East, a definite increase in vigour has followed systematic p. Prof. Biffen has produced which combines the valuable features of one race with the immunity to rust type. of another otherwise less valuable Careful selection in sugar-beet has resulted in an increase of sugar percentage from 8 to 17. More difficulty is experi noed with regard to animal breeding, and enced with regard to animal breeding, and theory at present does little else than give reasons for principles already discovered, such as vareful selection and the 'balancing of defects.' Inbreeding 'to ix type has been a long-estab, practice and 'outbreeding' to seeme vigour is its well-known companion rule. The matter becomes still more difficult when the

principles have to be applied to mankind. The small numbers of progeny of mammals, the time taken for their development, and the large number of characteristics to be considered, make the study of animal breeding, and particularly of engenics, a very slow process. Eugenics described elsewhere, is the science which deals with the improvement of the inherent qualities of the human race, and although its principles are based on H. and are thoroughly sound, yet intellative schemes of positive eugenics are very difficult to introduce, but a beginning has been made in the U.S.A. and under the Nazi regime in Germany, for instance by the compulsory sterilisation of individuals suffering from incurable forms of insanity. As mentioned earlier, conclusions certainly appear to indicate that man is almost entirely the product of inborn factors which are not directly affected by environment, and many responsible students of H. maintain that the improvement of conditions is resulting in the propagation of the degenerate, and the race as a whole is suffering in consequence. Natural selection as such is out of the question, but some restriction on the reproduction of the unit is undoubtedly demanded by H.

demanded by II.

('yto-penetics.—One of the most encouraging recent lines of work has been the correlation of evtology (i.e. microscopic observations of the cell (y.e.) and especially of the (hromosomes) with breeding experiments, whereby a new branch of biology, cyto-genetics, has originated, and mutual support has been afforded to what seemed at first to be disconnected studies. The facts of sexinaked inheritaines, for instance, have been luked up with observations on the seventomosomes. See R. C. Punnett, Mendelism, 1905 (7th ed. 1927); C. B. Davenport, Body-build and its Inheritaines, 1923; R. E. Gates, Heredity and Eugenies, 1923, and Human Ancestry, 1917; E. M. East, Heredity and Human 11/hurs, 1927; T. H. Morgan, The Theory of the Gene. 1928; E. B. Wilson, The Cell in Development and Heredity, 1928; P. Popenhoe, the Child's Heredity, 1928; P. Popenhoe, the Child's Heredity, 1930; E. B. Ford, Mendelism and Evolution, 1931; A. E. Watkins, Heredity and Evolution, 1933; J. 13. S. Haldane, Herodity and Politics, 1938;

Hereford, Earl of. This title dates from feudal times, the first holder of it probably being Wm. Fitzosbern, who led the right wing of the Conqueror's army at Hastings. The earldom was long held by the great tamily of Bohun. Before their day it was held by sev. Norman barons (besides Fitzosbern), one of whom left a daughter who married Humphrey Bohun, 'their son, Henry de Bohun, received the title in 1199. Among his descendants may be mentioned Humphrey, fourth earl of H. (1275–1322), who was taken prisoner at Bannockburn. In 1380 the heiress of the earldoms of Hereford, Essex, and Northampton, May de Bohun, married Henry Bolingbroke, who was made duke of Hereford in 1397. The

first viscount was Walter Dovereux (d.) 1558), who received the title in 1550 for his services in the Fr. wars; the second was the first earl of Essex, the father of Elizabeth's favourite; the third, Robert, was the distinguished general in the parlarmy. The present holder of the title is the second with the second of th the seventeenth viscount (b. 1865) eldest

troyed in 1055 by the Welsh, was rebuilt late in the eleventh century, the nave and other Norman parts of the building being completed in about 1140. The beautiful early Eng. Lady Chapel was built in about 1220 and other portions were not completed until the early fifteenth century. In 1786 the Norman W. tower collapsed, bringing down with it two bays of the nave, and its rebuilding was entrusted to Wyatt. He built a W. front so unsuitable that it had later to be replaced, shortened the nave by one troyed in 1055 by the Welsh, was rebuilt the seventeenth viscount (c. 1993) eigest as of the sixteenth viscount, whom he succeeded in 1930. Viscount Hereford is the premier viscount of England.

Hereford, municipal bor, city and co. th. of Herefordshire, England, on the bo replaced, shortened the nave by one



IV. F. Mansell

HEREFORD CATHEDRAL FROM THE N.E., SHOWING THE EARLY ENGLISH LADY CHAPEL

R. Wye, 144 m. from London by rail-way. Its site was seized by the Mer-cians in about A.D. 600 and used as an outpost against the Welsh, and later Offa made the Wye the Welsh boundary at Hereford. On account of its position, The two most treasured possessions of the H. was an important place in the Middle Ages when it became a prosperous centre of the woollen trade. Early charters describe H. as being in Wales. The describe H. as being in wates. The city's first charter was received from Richard I. in 1189, but long before that it had a well-defined system of local gov. Rdward the Confessor made his nephew, Ralph, earl of Hereford, and this Norman and half it for the castle wilds.

character. The restoration in 1863 was from the designs of Sir Gilbert Scott. The two most treasured possessions of the cathedral are its Chained Library and the Mappa Mundi. The latter is dated about 1300, and, since the disappearance of the Nuremberg map, is probably the earliest map of its kind in existence. Jerusalem is seen to be at the centre of the world. Only two other chained libraries can compare with the one at H., which contains amongst its 1440 books, some very are manuscripts and early printed vols. Ralph, earl of Hereford, and this Norman carl built its first castle which, however, together with the cathedral, was destroyed in 1055 following a defeat by the Welsh. From that time until the city's Caronicle and the only surviving copy of Welsh. From that time until the city's the Use of Hereford are a few examples. Capture by the famous Col. Birch in 1645. H. was the scene of constant warfare, the castle finally being demolished in 1660.

The cathedral, founded not later than 680 by its first bishop, Putta, and desThe 'Three Choirs Festival' and 'Three Counties Show' are held in If. every third year. The city is also interesting as the bp. of David Garrick, and, it is claimed, of Neil Gwynne, and for its associations with Sarah Siddons and Fanny Kemble. The fine bridge over the Wye was built at the close of the fifteenth century and from it there is a well-known view of the cathedral. Chief manufs. are tiles and cider-making, fruit preserving and engineering. An airport was opened in 1947 on the H. Racc Course. preserving and engineering. An airport was opened in 1947 on the H. Race Course. Pop. (estimated) 30,500.

Hereford Breed, see under CATTLE.
Herefordshire, inland co. on the S.E.
border of Wales, bounded on the N. by
Shropshire, and on the S. by Gloncestershire and Monmouthshire. Its area is
843 so, mend its environs is undulating 843 sq. m. and its unface is undulating. The co. is watered by the Wye and its tribs., all of which abound in fish, the Wye being especially celebrated for its salmon. The soil is particularly suitable for the growth of timber, and the cak, ash, and larch abound, but the co. is especially famous for its emple and near tree. and larch abound, but the co. is especially famous for its apple and pear trees. It is also noted for its cattle of bright red hue, with mottled or white faces, which produce very fine beef. There are no minerals of economic importance, and but few manufs. Pop. 113,000. See H. L. V. Fletcher, Herefordshire, 1948.

Herefordshire Regiment. Formed in 1701 and number 43 56th knot. L'aked in

Herefordshire Regiment. Formed in 1701 and numbered 36th Foot. Licked in 1881 with 29th to form the present Worcestershire Regiment (q.v.). It gained the motto 'Firm' for its staunchness during active service in Bangalore, India, in 1791. The present H. R. is a territorial army unit, having descended from a volunteer unit formed in 1860. It served in the S. African War during 1900–1902 and raised four battalions during the First World War, which served in France and Flanders from 1914 to 1918. In the Second World War they fought in France.

Second World War they fought in France.
Herent, Belgian tn. in the prov. of
Brabant, situated on the R. Dyle, 14 m.
E.N.E. of Brussels. Makes starch, oil,
tlle-stones and bristles. Pop. 8300.
Herentals, tn. in Belgium, 19 m. E.S.E.
of Antwerp, on the Albert Canal. The
tn. hall with belfry dates from the fifteenth
century and has manys, of woeller goods. century and has manufs. of woollen goods, footweer, tobacco and has diamond-cutting, breweries, tanneries, brick-works, rope-walks, and an iron-foundry. Pop. 14,600.

Herero, the Hs. form a branch of the Bantu tribes of the Ovambandus. They

in the reed country—though where this country was situated has never been determined. Two chieftainships migrated from there and dwelt with the Bechuanas.
The Hs. owned great heads of cattle. One
of the H. chiefs came into conflict with

and 1750). The Kaokoveld then stretched in H. from the Kunene R. in the N. to the Omaruru R. in the S. The second H. rick, and lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the present S.W. Africa (q.v.) where their descendants lived in the N.E. part of the N.E. part grazing lands and pastureless fountains, did not serve the requirements of the Hs. with their ever-growing riches in cattle, and they trekked into the southerly veld and Otitambi became their religious and controlling centre. In 1750 the first big owners of cattle trekked S. over the Omaruru, drove away the Saan and Berg Damaras, were once more united with their brother tribe, the Ovambanderu, and eventually occupied all the country N. of the Swakop R. and eastwards to beyond Gobabis. Not all the Hs. left the Kackoveld, the Ovahluba-Hereros remaining in the N. as their grazing and watering places sufficed for their needs. They are poor classes, but by tradition, religion and language, they are pure Hs. and it is only the Ovamnos and Hs. who trekked S., who call them Ovatjimba. trekked S., who call them Ovatjimba, which means 'antbear.' The H. tribe were largely exterminated by the Gers. in 1903-04 in circumstances of deliberate and callous barbarism. Ger. misrulo, oppression and crueity goaded the Hottentots into rebellion in 1903 and shortly afterwards the Hs. rose too. The anct. enemies were united in misery. The Berg Damaras, through their association with the Hs., suffered equally in the slaughter which followed. The natives were no match for the trained Gers. with thoir modern weapons and by the close of 1904 it was evident that both the Namas and the Hs. were broken races. Scattered bands, however, held out and

the Gers. then sent thousands of troops into the ter. In the guerilla warfare which followed the first big engagements violence begat violence and the Ger. forces were spurred to fresh vengennce by tales of spurred to frosh vengennee by tales of mutilations of Ger, soldiers who fell into II. hands. Leutwein, regarded as too lenient, was replaced by von Trotha, noted in Berlin for the severity of his dealings with natives. Von Trotha trapped sev. of the II. leaders with reacherous enticements to peace talks and then issued his notorious Vernicht was Existed (extensionates ended). tungs Befell (exterintation order) under which no II.—man, woman or child—was to receive nicroy or quarter. The Ger-soldiers were ordered to kill and take no prisoners and you Trotha explained afterwards that he wished to ensure that never again would there be another H. re-bellion. The order was issued against an of the H. chiefs came into conflict with again would there be another H. rethe Bechuanas as the grazing lands of the bellion. The order was issued against an latter extended far into what was once known as Hereroland and a deciding battle took place at Etemba, N. of Okahandja. The Hs. were beaten and saved their eattle by trekking into the story of this typical Ger. sadism, based on the sworn descriptions of eye witnesses, molested for some two centuries (1650 to has been told in a bulky official report presented to the Brit. and S. African Parliaments (pub. by H.M.S.O., London, as Umd. 9146 of 1918). The war ended in 1907 with the H., Nama and Berg Damara tribes utterly broken and scattered to the winds, some taking refuge in adjoining Brit. ter. Eighty per cent. of the H. people had disappeared and more than half the Hottentots, while the Herg Damaras fared little better. The Hs, in 1904 numbered 80,000; in the official census of 1911 they numbered only 15130—a decrease of no fewer than

Heresy (Gk. a'peas), choice, a term in theology, signifying 'a choice of doctrine.' In the N.T. it is used with various meunings, in the Acts of the Apostles it is applied to the Pharisces and Sadducees. in the Epistles of St. Paul it is used to denote the divs. in the Christian church, and in St. Peter's Epistle the modern meaning 'falsely chosen' is first sug-gested in the words, 'Among you also there shall be false teachers, who shall privily bring in destructive heresies, donying even the master that bought them, etc. Again, it was used by Ignatius to etc. Again, it was used by ignatius to signify theological error, and as the doctrine became more important, it was restricted to views at variance with the recognised creed. Heresy, according to Thomas Aquinas, implies a profession of Christian belief; the heretic is right in the end he proposes to himself, but wrong in the means to that end. Even in apostolic times, Hs, existed in the church, and before the council of Nice there and before the council of Nice there existed many sects; but these earlier Hs. were chiefly concerned with the introduction of Jewish or pagan elements into the faith of the church, and were punishable by excommunication, etc., whereas the later Hs. were differences in interpreta-tion of Christian truth, and were regarded as legal offences, and punished accordingly. Constantine enacted sev. severe laws for the repression of H., which appear under the title 'De Hæreticis' in the Justinian code, and the penalty of death is even included among these, and in the Eng. law the offender was tried by the arch-bishop and his council, and then handed over to the king for punishment. But the statute of Henry IV. (In heretico comburendo) empowered the diocean to hand over the criminal to the sheriff without waiting for the king's writ. This statute remained in force until Charles IL's reign, after which time the punishment of heretics was left to the cocles.

Herward the Wake, outlaw, received his title of 'the Wake' from John of l'eterborough. According to the Domesday Book he was the owner of lands in Lincolnshire, and he may have been identical with the owner of Marston Jabbet, Warwickshire, and Evenlode, Worcestershire. He headed the rising of the Eng. at Ely in 1070, and plundered Peterborough with the help of the Danes. He was joined by Morkere, Saward Bain, and Æthelwine, Bishop of Durhum, and held out against William until 1071, when Æthelwine and Morkere surrendered. H. escaped, and

according to Gaimar, was pardoned by William, whom he accompanied to Maino, where he was murdered by the Normans. Herford, tn. on the Werre in Westphalia, Germany, 10 m. N.E. of Bielefedd it is of anct. origin and contains many old buildings, including a twelfth-century church. It carries on a considerable trade and manufs. tobacco, cloth, and furniture. Pop. 38,500.

Hergenrother, Joseph von (1824-90), Ger. theologian. He was author of Anti-Janus (1870), in which he defonded the doctrine of papal infallibility. The work made a great sensation, and he was made a prelate of the papal household in 1877, becoming a cardinal in 1879, and curator of the Vatican archives. He also wrote Photius, Patraurch con Konstantinopel (1867-69), Katholische Kirche und Christlicher Staut (a book on the relations of church and state, 1872), a universal church hist. (1876-80), and a hist. of the papal states since the Revolution. See monograph by J. Stamminger, 1892.

Hergesheimer, Joseph (b. 1880), Amer. novelist, b. at Philadelphia. He was educated at a Quaker School and the Pennsylvania-School of Fine Arts. Estab. himself

Hergesheimer, Joseph (b. 1880), Amer. novellst, b, at Philadelphia. He was educated at a Quaker School and the PennsylvaniaSchool of Fine Arts. Estab. himself as one of the best of the younger generation by his novol, Mountain Blood (1915), and enhanced his reputation still further with his Three Black Pennys (1917). His best novel is Java Head (1919). Other stories, The Bright Shaul (1922), The Presbyterian Child (1923), Fallsand (1924), Tampico (1926), and The Foolscap Rose (1927).

Hergest, Red Book of, name given to a MS of Welsh literature, which is now in the library of Jesus College, Oxford. It is a folio vol. of 360 leaves written in double columns from the beginning of the fourteenth century to the middle of the fifteenth century, and contains eleven tales, the stories of which mostly relate to King Arthur and the early Brit. kings. Lady Charlotte Guest printed those tales together with Hanes Taltessia under the title of Mabinogiam, 1838-49. The MS, is supposed to have been written at Hergest Court, a seat of the Vaughans, hence its name.

Heringsdorf, tn. on the is. of Usedom in Pomerania, Germany; it is a watering-place on the Baltic. Pop. 1700.

Heriot, curious archaic right (now obsolete) incident to copyhold tenure, by which the lord of the manor was entitled, on the death of a tenant, to seize his best beast or other chattel. A H. came in Saxon times to be really a tribute of warhorses, weapons, or armour due to the king on the death of a thane. These anct. Hs. were sub-sequently rendered obsolete by the institution of reliefs, or sums paid by a vassal on taking up his estate. The copyhold H. had a different though analogous origin and selated to sceape lands as opposed to those held by knight service. The origin of the right is to be sought in the anct, custem of a frechelder furnishing his tenants in villeluage with cattle and the implements of husbandry. The right of the lord to this kind of H. was restricted to such chattel as the

manorial customary law allowed, and that law varied in different manors

Heriot, George (1563-1624), Scottish goldsmith, b. in Edinburgh. He was brought up in the husiness of his father, who was a goldsmith, and in 1601 became joweller to James VI., having already been appointed in 1597 goldsmith to his queen, Anne of Denmark. In May 1603 he accompanied the king to London, and was one of the three mercurs appointed. one of the three persons appointed jewcliers to James 1. In 1620 a grant was made to him of the imposition on was made to him of the imposition on sugar for three years, and out of the proceeds he founded Heriot's hospital, Edinburgh (see Heriot-Wart College). It, is the 'Jingling Geordie' of Scott's Fortunes of Nigel.

Heriot-Watt College, Edinburgh, was subsidised from the fund (£23,625) left by George Heriot in 1624 to found and endow a bosoitist for the maintenage of the sons

a hospital for the maintenace of the sons of poor burgesses. This school was com-pleted in 1609, and in 1885 the funds had increased to such an extent that it was reconstituted as a middle-class school, and the H. W. C. was opened to provide a thorough scientific and technical instructhorough scientific and tocunical instruc-tion at moderate fees for older students. In 1927, by the provisions of the H.-W. C. and George Heriot's Trust Order Con-firmation Act, it became a college for providing technical, trade, commercial, and general ordine?! In for both sexes, and was recognised by the Scottlish Education Dept. as a Central Institute for Edinburgh and S.E. Scottland. Day and exemps and S.E. Scotland. Day and evening instruction is given in Mechanical, Electrical, Mining, and Oil Engineering, in Applied Chemistry, Brewing, Pharmacy, Building, and Frinting; while evening courses in Commerce and Lunguages are given to students of Accountancy, given to students of Accountancy, Banking, Insurance, Secretarial Practice, Stockbroking, and Shipping. The H.-W. Literary Society (founded 1868) celebrated its diamond jubilee in 1928. The lord provost of Edinburgh is chairman of the Governors of the H. W. C., and many notable men have received instruction in this institution.

this institution.

Heri Rud, or Hari Rud, riv. of Afghanistan, Asia, rises in the Kon-i-baha Mts. It flows W. for 300 m. to Herat, turns N. at Kushan, and is joined at Pui-i-Khatun by the Keshef Rud. At Sarakha it is called Tejend. It enters Turkestan and is lost in the Kara-Kum desert. It contains quantities of inch. Length 650 m.

Herisau, tn. in the canton of Appenzell, Septemberg, and of the Ausser-khoden.

Switzerland, cap. of the Ausser-Rhoden dist., 51 m. S.W. of St. Gall. It contains an old bell tower and th. hall, and the sulphur baths of Heinrichsbad are quite near. It manufs, couton goods and embroidery.

Pop. 15,090.
Heristal, see Herstral.
Heristal and Moveable, in Scots hw.
a fundamental distinction between legal rights and things, more or less parallel to the Rom. classification of things cor-poreal and incorporeal. The distinction poreal and incorporeal. The distinction is mainly of importance in respect of the rights of an heir as opposed to those of the executors or next of kin of a deceased person. The distinction does not neces- land, 1754.

sarily correspond to the physical distinc-tion between moveable and unmoveable property, although, generally speaking, all rights in or connected with land are herifable, and whatever can be moved without ante, and whatever can be moved without injury to itself or the property with which it is physically connected is moveable property. But, as in the Eng. law of fixtures (q.u.), things which are physically moveable may, in Scots law, become heritable by accession (Lat. access, to aid), and conversely, things in their nature beritable may be constructively converted into moveables by being made part of a move-able whole, as e.g. heritable things made able whole, as e.g. nertable things made part of the common property of a trading company. See J. Erskine, Principles of the Law of Scotland, 1754; G. J. Bell, Commentarius, 1810.

Heritable Jurisdictions, In Scotland

Heritable Jurisdictions. In Scotland all pursdictions were originally personal, i.e. granted in consideration of the fitness of the grantee, but when the fendal system was introduced certain jurisdictions, such as sheriffships, were annexed to lands and braune heritable, like the lands to which they were annexed. Later, when sheriffships ceased to be territorial, the crown made heritable grants of such jurisdiction to landowners. The Jurisdiction Act. of 1746. in consequence of the Jacobita 1746, in consequence of the Jacobite rebellion of 1745, abolished all H. J., compensated the persons who owned them,

and made jurisdictious personal to the king's courts. See J. Erskine, Principles of the Law of Scotland, 1754.

Heritable Security, or Securities on Heritable Estates, in Scots law, include all bonds, heritable and of annuity, instruments entitling a creditor to appropriate the rents of land until debts are paid, and all deeds whatsoever capable of constituting a security for debt over lands or the rents and profits of land, and since 1874 also securities by way of ground-annual (q.v.). The form of a H. S. is either by (1) a direct conveyance of the lands either subject to the right of redemp-tion or absolutely, or (2) by real or reserved. burden containing no disposition of the lands. A.H. S. is extinguished by formal redemption. See J. Erskine, Principles of the Law of Scotland, 1754.

Heritor, in Scots law formerly denoted the owner in fee of a corporal heritable subject or any par. landowner, but is a term now restricted to such landowners whose estates are subject to the burden of repairing the manse of an incumbent (q.v.), or of providing a church for newly churches as already exist. The term includes railway companies or other corporations and burgh councils, but not lifetenters, tenant, on long or short leases, or fen superiors. The question whether realrent or valued-rent lis. are to be assessed for repairs depends on the nature of the par, whether landward or burghal. Hs. may, however, do the repairs voluntarily, and assess themselves at a meeting in the presbytery or in the sheriff court, and they are entitled to borrow money for the purpose. See G. J. Bell, Commentarius; J. Erskine, Principles of the Law of Scot-

Herkimer, tn. and cap. of H. co., New York, U.S.A., on the Mohawk R. It manufs. paper, furniture, and woollen goods, and is the centre of a dist. famous for its cheeses. Pop. 10,500.

Herkomer, Sir Hubert von (1849-1914), Brit. painter, b. at Waal, in Bavaria; gon of Lorenz H., master-joiner. His parents took him to America when he was aged two: ufter six years there, they came to England. He first studied at the School of Art at Southampton, but in 1866 went to S. Kensington. He exhibited at the Royal Academy in 1869, but made his reputation in 1875 by 'The Last Muster, hung that year. A.R.A., 1879; R.A., 1890; Slade prof. of fine arts at Oxford, 1885-94. In 1883 he founded the Herkomer School of Art at Bushey, which he directed until 1904. In 1907 he was made hon D.C.L. Oxon and knighted. An associate of the Institut de France and of the Belgian Academy. His works in-An associate of the Institut de France and of the Belgian Academy. His works include: 'The Herkomers' (1910), 'Found' (1885), and 'The Chapel of Charterhouse' (1889), both of which are in the National Gallery of Brit. Art), 'Portrait of Miss Katherine Grant,' 'Portrait of the Lady in Black,' 'Hard Times,' 'On Strike,' 'The Guards' Cheer.' Long conspicuous by reason of his great beard, he was clean charge in the constant of the strike,'

ov reason or his great beard, he was clean-shaven in later years.

Herm, small is, of the Channel Is. After the First World War it was developed as a holiday resort. It can be visited in the summer from Guernsey, from which it is distant 3 m. The pro-

Herma Pillars, pillars smaller at the base than at the top, which generally terminated in a head of Herma. They were found in Attica in the streets of the tns., and after the time of Hippar hus, the son of Plaistratus, they were also erected along the country roads as m. stones, Hermes being the god of traffic. They were particularly numerous in Athens, and in the mrkt.-place they formed a long colonized resching from the Hall of in the mrkt.-piace they formed a long colonnade reaching from the Hall of Paintings to the King's Hall. It was the charge of sacrilogiously mutilating these figures which caused Alchaudes to flee from Athens in \$15 and throw in his lot with the Spartans.

Hermandad, The (Sp. 'brotherhood'), association of the cities in Aragon and Castile, formed in the middle of the thirteenth century to defend their liberties. It was more firmly organised in 1297, when Sancho IV. came to the throne with the experse object of resisting the tyranny and exactions of the nobles, and received favour from Ferdinand and Isabella, who endowed it with large powers of summary jurisdiction. But as the power of the crown increased, so that of the II decreased, and about the middle of the sixteenth century it coased to exist. The name was, however, borne by a body of police in Castile, whose chief duty it was to protect the roads. See A. R. Lesage, Histoire de Gil Blas de Santillane, 1735.

Hermann, or Herman, see Arminius. Hermann. Johann Gottfried Jak Hermann, Johann Gottfried Jakob the stamens reach maturity first, or 1772-1848). Ger. classical scholar, b. at protogymous dichogamy, in which the car-

Leipzig. He was educated at the univ. of his native city, and was made prof of philosophy there in 1798, becoming prof. of eloquence and poetry in 1803. He made a special study of classical poetical metres, publishing his Elementa doctrinæ metricæ, in 1816. He also wrote on Gk. grammar, and pub. De emendanda ratione Grorcæ grammaticæ (1801). His other works include eds. of Aristophanes's Clouds; Aristotle's Poetica; Plantus's Trinummus, hesides an ed. of Æschylus, and the remainder of Erfurdt's Sophocles. See lives by O. Jahn, 1849, and H. Kóchly. 1874; and U. von Wilamowitz-Moellendorf. Geschichte der Philosophie, 1921.

Hermannstadt, see SIBIU. Hermannstal, see MURDW.

Hermannic, or Ermanaric (d. A.D. 376), king of the E. Goths, founder of their kingdom, which probably included N. Hungary. Lithuania, and S. Russia. He was defeated by the Huns during the migrations of the peoples of N. Europe, and fellow his over small. and fell on his own sword. See W. K. Grim, Die deutsche Heldensage,

1829.

Hermant, Abel (b. 1862), Fr. novelist, b. in Paris. Educated at the Lycée Bonaparte and at the Condorcet. President of the Societé des Gens de Lettres (1902). of the Société des Gens de Lettres (1902). Member of the Fr. Academy. A brilliant satirist of the wealthy bourgeoiste of France. Mémoires pour servir à l'histoire de la société, 190, 1, 1 the general title of his chief work in this vein. Le Caravanserai, (1917), a study of wealthy compoplitans in Paris, is probably his most widely known book. Other works: La Mission de Cruchod (1855), Madoré (1888), La Carrière (1891). Caeurs privilegés (1903), L'Esbrouffe (1901), La Belle Mindame Héber (1905), La Journe brice (1920), La Pehle Femme (1923), Le cycle de lord Chelsea (4 vols., 1923). See Peltier, Abel Hermant, 1921. Hermant, 1921.

Hermaphrodite, so named from the mythical Hermaphroditus (q.r.), is a living organism containing in itself a combination of the essential male and female functions and structures. It is very doubtful if true hermaphroditism is present in the higher mammals, though it is common in many of the lower orders, as in the sluggish leech and snail, the fixed ovster, or the parasitic tapeworm. Many flowering plants are hermaphroditic, though of vary-ing degrees of inclinacy; in the case of the arum, the male organs are situated above and distinct from the female organs, but in the orchid the stomens and carpels are united; this is paralleled in the case of the locch, where the two elements are distinct and separate, though not so in the snall. Some animals may pass through embryonic hermaphrodutism, though this bryonic hermaphroditism, though this condition is doubtful in man as sex appears to be predetermined in the fertilised ovum. (See Herepity.) Self-fertilisation is largely prevented by the two elements developing at different times in the organism. This 'want of time keeping' is termed dichogamy in botany, and may be either prolandrous dichogamy, in which the stamens reach maturity first, or

pels first reach full development. earlier maturing of the male element is the more common occurrence, the hag-fish yielding an example from the animal kingdom. Self-fertilisation among animals is rare, but it is found in the fish Serranus and in the tape-worm.

Casual or abnormal hermaphroditism is occasionally found in fish where an ovary is altuated at one side and a testis at the other, in which case it is usual for only one organ to develop and one sex to pre-dominate, with mere indications of the other. Sometimes in such insects as e.g. a butterfly, one pair of wings will be indicative of the male sex and the other pair will be female, or the under and upper surfaces may be of different sex appearance.

False hermaphroditism may occur in the higher mammals where malformation has resulted in a female animal possessing the exterior appearance of a male or vice versa. Much discussion has taken place versa. Much discussion has taken place from time to time relative to herma-phroditism and primitive conditions, but the general opinion appears to be that hermaphroditism is not a reversion to, nor a survival of, a primitive condition, but rather a secondary acquisition.

Hermaphroditus, son of Hermas and Aphrodite, b. on Mt. 1da. He was finally united into one person, having the characteristics of hermaphroditus, with the nymph of the Carian fountain Salmacis. The statue by Polycles (fourth century B.C.) is

tamous.

tamous.

Hermas, probable author of The Shepherd (Pastor Hermæ), an early Christian allegorical and hortatory treatise divided into three parts: 'Visions,' 'Mandates,' and 'Similitudes.' H. is usually classed as one of the apostolic fathers (q.v.), but there is much discussion as to his identity. The Muratorian canon makes him brother of Pins I bishon of Rome (c. 130-51) of Pius I., bishop of Rome (c. 139-51). The work is prized as a relic of the primitive church, describing second-century Christianity in Rome. Some recent Christianity in Rome. Some recent critics think it may originally have been a Jewish book, revised and onlarged later by a Christian writer. The date usually assigned to it is between A.D. 100 and 150. The shepherd or angel of repentance ap-The shepherd or anger or rependence appears to H. in the fifth vision, and addinaturation (twelve mandates and ten similitudes) to the message he is to deliver to the people. The seem is laid deliver to the people. The scene is faid in Rome and the neighbourhood. Ireneus, Clement of Alexandria, and Origen highly esteemed the work, and it was publicly, read in churches at one time, but definitely outside the sacred canon by the fourth century. It aimed at rebuking world-liness and calling sinners to repentance. See J. A. Neander, History of the Church, 1825-52; Sir J. Donaldson, Apostotic Fathers, 1874; C. T. Cruttwell, Early Christianty, ii., 1893; J. B. Lightfoot, Apostotic Fathers (ed. by J. R. Harmer), 1893; H. U. E. Kruger, History of Early Christian Literature, 1897; O. von Gebhardt, A. von Harnack, and T. Zahn (ed.) Patrum apostolicorum opera, 1920; E. Hennecke, Neutestamentische Apokryphen, 1924. Clement of Alexandria, and Origen highly 1924.

Hermeneutics (Lat. ars hermeneutics, to interpret; from Hermes, the messenger of the gods), the science or art of interpretation or explanation of the language of speakers or writers. More especially applied nowadays to the explanation of the Holy Scriptures, covering practically the same meaning as 'exegesis,' a term more often used at the present time. See EXECUSIS.

Hermes, Georg (1775–1831), Ger. Rom. Catholic theologian and philosopher. Ho Catholic theologian and philosopher. Ho was founder of the school of Hermesians. His rationalistic doctrinos, influenced to some extent by Kant and Fichto, were embodied in his Einleitung in die christkatholische Theologie (1819-29). They were in high favour till the death of Spiegel, archilehop of Cologno, in 1836. Pope Gregory XVI. issued a brief condemning his teaching two years later, but by that time his school had practically vanished. His other prin. work was (Institute Dogmatik (1831-36). See W. Esser, Denkechrift auf Georg Hermes, 1832; K. Eschweiler, De swei Wege der neuern Theologie, 1926.

Hermes, one of the anct. gods of Greece, son of Zous and Maia, identified by the

son of Zous and Maia, identified by the



HERMES

Roms, with Mercurius. The chief characteristics of his many-sided nature were acteristics of his many-sided nature were inventiveness and versatility, and he is represented as possessed of fascination, trickery, and cunning. A legend tells of his invention of the lyre from the shell of a tortoise, and stealing of fifty head of cattle from his brother Apollo on the very day of his birth. His guilt was discovered through Apollo's gift of prophecy, but he was partoned and granted his brother's friendship and various privileges

in exchange for his wonderful mudcal retiros into solitude in order to live a more instrument. His original functions and primitive character are quite uncertain. eremite' were apparently used indistructions. The words 'hermit' and primitive character are quite uncertain. eremite' were apparently used indistructions and the chief seat of his worship. He appears to have been closely connected ling now generally adopted, 'eremite' appears to have been closely connected ling now generally adopted, 'eremite' are apparently adopted, 'eremite' appears to have been closely connected ling now generally adopted, 'eremite' are appears to have been closely connected ling now generally adopted, 'eremite' are appears to have been closely connected ling now generally adopted, 'eremite' and primitive character are quite uncertain. bp. and the chief seat of his worship. He appears to have been closely connected with almost every phase of life. He was both the messenger of the gods and the guide of the dead to Hudes (Ψυχοπομπός). As god of the roads and of wayfarers he was honoured by stone heaps and pillars of 'Hermæ' (q.r.), often set up as milestones and terminating in a bust. H. was the god and terminating in a bust. H. was the god of exchange and barter, and even patron of thieves, hence regarded as the giver of gain—any unexpected windfall being called opator. From this may have developed the conception of H. as a god of fertility. He was also the god of dreams, gymnastics, and eloquence. As herald he was mostly represented in art with winged feat, a flat hypod-hypmed hat (regrees) feet, a flat broad-brimmed hat (meravos), feet, a flat broad-brimmed hat (reraces), and a wand (repression or caducous). See Sir J. G. Frazer, Golden Bough (2nd ed.). iii., 1900; A. Lang, Myth, Poliud, and Religion, ii., 1887; L. R. Farnell, The Cults of the Greek States, v., 1909.

Hermes Trismegistus, see HERMETIC BOOKS and THOTH.

Hermetical Seal, in alchemy and chom. is the method of sealing a glass yessel by

is the method of sealing a glass vessel by actually fusing the glass, without employment of a cork or stopper. It is so called after Hermes Trismegistus (q.v.),

mythical founder of chemistry.

Hermetic Books, form of encyclopedia,
the sacred canon of the anet. Exyptians, fragments of which are all that survive. It originally consisted of forty-two books. at originally consisted of forty-two books, divided into six sections, treating of religion, art, science, geometry, astronomy, medicine, liturgical rites and ceremonies, hymns, laws, the nature of the gods, etc. The word 'hormetic' is derived from Hermes Trismegistus, the Gk. designation of Thoth, the Egyptian god of intelligence. The books are evidently based on Egyptian mythology. but of intelligence. The books are evidently based on Egyptlan mythology; but neither the time at which they were written, nor the author, can now be determined. Fragments of the Gk. and Lat. texts exist in the writings of Stobeus, Oyrillus, Lactautins, and Sunday, some of which were trans. Into Fr. by Ménard in 1868. Traces of Neo-Platonist dens can be traced in the books, as well as undications of the influence of the Jewish philosopher, Philo. See A. Kingsford. The Hermetic Philo. See A. Kingsford, The Hermetic Works, 1885.

Hermias, (1) Gk. philosopher of the Alexandrian school, and a disciple of Proclus. Wrote a commentary on Plato's Photelage. (2) Christian philosopher of Proclus. Wrote a commentary on Plato's Phaetras. (2) Christian philosopher of the fourth century. One small thesis of his is extant, in which he attacked pagan philosophy for its illogicality. See van Otto, Corpus apologetarum, Jena, 1872. Hermione (mod. Kastri), an anct. coast-vil. of Greece, prov. Argolis and Corinthia. The rocky peninsula of Visti forms a double port N. and S. Ruins of temple to Pagadon remain. It was

appearing only in poetry, etc. Anchorite is another synonym. As early as the third century Hs. began to appear in the Christian church, and the advocates of ascerticism were the first to set the ex-ample by withdrawing from the cities and taking up their abode in rudely-formed huts in desert or in forests. But these, as But these, as a rule, went in companies, whorous the H. went a step further and withdrew altogether from mankind, living alone. The first H. is said to have been Paul, a native of the Lower Thebaid, who, in the time of the Docian persecution (250), fied into the desert. His story is told by St. Jerome, who records that he was visited by St. Anthony, another auchorite, who was generally held to be the first great ex-ample and preacher of the H. life. But the St. lifes, who spent their lives at the tone Stylites, who spent their lives at the tops of pillars, and the Busci, who lived on herbs, were not true lis., nor were those who, in later times, separated themselves from their fellow-men to live in caves solely to avoid intercourse with society, and not from any religious motives. Hernitism was not so popular in the W. as in the E. church, probably owing to the un-affability of the climate, and as monasteries developed Hs. became more scarce.

Hermitage, dry, red wine, resembling Burgundy in colour and body, obtained from the vineyards of the Rhone valley. It is not dissimilar from the best kind of

claret.

Hermit-orab, family of unsymmetrical crustaceans characterised by a hook-like attachment to the pleopods, by means of which the annual can secure itself within the shell. "Lupagurus bernharlus, the commonest Brit. species, generally inhabits the shell of the whelk. See also COMMENSALISM.

Hermocrates (c. 460-407 B.C.), Syracusan statesman and general, who succeeded in uniting the siccliots (424) so as to enable them to resist the Attentan expedition against Sicily (115). After the Athenian defeat (413) he helped Sparta against Athens, and held a high command at the naval battle of Cynossema (412). On his defeat at Cyzicus he was deprived of his command and exiled (409). H. fought later against Carthage, and was killed in attempting to return to Syracuse (407). He was one of the most energetic, patriotic, and incorruptible leaders of antiquity. See Thuc. iv.-viii.; Dlod. xiii.; G. Groto, Hist. of Grece, x. 81, 1846-56. Hermogenes (fl. A.D. 170), Gk. rheterician of Tarsus, Cilicia. At the age of fitteen his reputation as ofator and lecturer

Corintia. The rocky peningula of Visti forms a double port N. and S. Ruins of a temple to Poseldon remain. It was founded by the Dryopes. See Pansanias, fi. 34; Herod., viii. Pop. about 3000.

Hermit (Gk. ¿papular, a solitary; from its ropulation as of alto and lecturer won him the fuvour of Marcus Aurelius forms the famous Tipe property. At the age of eighteen he pub. the famous Tipe property. . . . long regarded as a standard work, and elaborated by many commentaries. At twenty-ippula, a desert), name given to one who

C. Walz, Rhetores Græei, 1832-36 (new ed. with commentaries by Rabe, 1862-83, 1913; L. von Spengel's ed. 1853-56; Aldus, Rhetores, I., il.; Philostratus, Vitæ

Aldus, America, 1, 2, 3, 5, 5, 168-200), here-specially and the second century, originally a painter and pagan philosopher of the Converted to Christianschool of Zeno. Converted to Christian-ity, he elaborated a system attempting to unite Stoic ideas and Christian dogmas.
Tertullian accused him of hercey in Adversus Hermogenem. See Theodoret, Fab. Hæret, i. 19.

Hermon (modern Jebel-esh-Sheikh), mt.-ridge and culminating point, forming S. extremity of the Anti-Libanus range, S. extremity of the Anti-Libanus range, Syria, on the border of Palestine, 35 m. from Damascus. Called Sirion by the Sidonians and Senir by the Amorites. The modern Arabs call it Jebel-esh-Sheikh, 'Old Man Mountain' or Jebel-eth-Theil, 'snow mount.' The crown has three peaks (c. 9160 ft. high) covered with snow for most of the year, and it towers high above the anct. etty of Dan and the sources of the Jordan. The lower slopes have rich vecoriation and are planted with have rich vegetation and are planted with vines and fruit-trees. Ruins of anct. temples surround it, mostly consecrated to Baal. Heb. poetry constantly mento Baal. H

(mod. Erment), Hermonthis (mod. Erment), tn. of Kena prov., Upper Egypt, on R. Nile, 8 m. from The hew. As the anct. Egyptian 'On of the South it was famous for its worship of the hawk-headed god Mont (Zeus) and Horus (Apollo). There are ruins of a temple of Cleopatra's time. The burlal place of the sacred bulls of Mont was discovered in 1927. The modern tn. has sugar refineries, post and a railway station. Hermonthis telegraph offices and a railway station.

Pop. about 7000.

Hermoupolis, or Syra (Nea-Syros), seaport and cap. of Syros Is., Greece, 78 m. from Athens. It is the seat of the home from Athens. It is the seat of the home of the Cyclades, of a (ik. archbishop, and a Rom. Catholic bishop. Commercially it is next in importance to Athens, the Piracus, and Patras, its position in the Ægean making it a centre of the Levant trade. There are manufs, of flour, leather, cotton, and 'Turkish delight.' H. has an arsenal, gymnasium, theatre, and custom-house. Shipbuilding is car ward on. Pop. 21,000. and custom-house. Si ried on. Pop. 21.000.

Hermsdorf, Nieder, tn. in Silesia Poland, is 2 m. W. of Waldenburg (Wal-brzych). It has coal and fron mines.

Poland, is 2 m. W. of Waldenburg (Walbrzych). It has coal and iron mines. Pop. 12,000.

Hern, Gertrude Franklin, see Atherron. Hernandez, José (1831-91), Argentine poet; b. at San Martin, prov. of Buenos Aires. In late 'sixtes, ed. Revista del Rio de la Plata. Buenos Aires. Follower of insurgent Lopes Jordan, 1870-72. Many years legislator in native prov. His only considerable poem is Martin Fierro (1878), an epic of the Argentine.

Philip II. There are four genera in ed, and the chief of these is Hernandia.

Hernani, tn. on the Urumea, prov. of Guipuzcoa, Spain, is 8 m. S.E. of San Sebastian. It played an important part in the Carlist wars (1835-40). It consists the constant of the constant part in the consta

in the Carlist wars (1835-40). It contains a modern palace, and has iron mines and cotton factories. Pop. 5000.

Herne, tn. in Westphalia, Germany, It m. N.E. of Essen. It has coal mines, and iron works and is the terminus of the Ridine-Herne canal. Pop. 98,500.

Herne, James A. (James Aherne) (1840-1901), Amer. actor and playwright. He acted in many plays of his own, the first being Hearts of Oak (1878), Drifting Apast (1885), The Minute Men (1886), and Margaret Fleming (1890) followed, but his next great success was the rural comedy Shore Acres, performed at Chicago (1892). Share Acres, performed at Chicago (1892), which ran for nearly six years. His last production was Sag Hurbour (1900). See

production was Sag Harbour (1900). See
L. (1. Strang, Famous Actors of the Day in
America, 1900.

Herne Bay, tn. and watering-place, in
the co. of Kent, England, on the estuary
of the Thames, is 6 m. N.E. of Canterbury.
It was founded in 1830. Canary grass,
introduced by Flemish immigrants, is
grown in the vicinity. Pop. 16,600.

Herne Hill, suburb of London, 4 m. S.
of St. Paul's. The name is supposed to
be derived from the herons that frequented
the Effra. a rly, fornerly flowing through

the Effra, a riv. formerly flowing through Herne Hill. Ruskin spent the early part

of his life here

Herne the Hunter, traditional figure of riente me Hunter, reantonal ngare of cid Eng. legend, popularly supposed to roam at midnight near an old oak, famed as 'Herne's Oak,' in Windsor Forest. The oak was thought to have been blasted by the hunter's evil spirit, and was blown down in 1863 (c. 650 years

old). Hernia, or Rupture, surgical term, signifying the protrusion of any part of the signifying the practision of any part of the body from the cavity in which it should be contained. In popular language, a upture means an extrusion of a portion of the contents of the abdominal cavity. A rupture may be present at birth, from A rubture may be increase as batta, as in the failure of closure of the eavity, as in the case of an umbilical H., when the navel is unclosed at birth. Again, rupnavel 14 unclosed at ourn. Again, rup-tures may occur in early life, and are then known as intantile 11s. The opening of an intantile umblical H. usually closes with age, the closure being generally firm and permanent. An umblical H. may appear in fat individuals, particularly in temales on account of pregnancy, and, if neglected, may attain an enormous size. Impures are generally due to weakness of the body wall, though they are more liable to occur in individuals who throw con-iderable strain ou their abdominal walls, a, for example, those who do heavy work. Persons who are subject to broughitis are apt to suffer from H., the condition being His only considerable poem is Marin apt to suffer from it, the condition being Fierro (1878), an epic of the Argentine.

Hernandissees, older of cotyledonous plants, clovely allied to the Lauracem (q.e.), but differing from that order in the rectum, the position adopted being that the flowers are epigynous. It probably to blame. The most common received its name from the Sp. naturalist form of H. secure in the groin, through the Hernandez, who was sent to Mexico by failure of closure of the canals, i.e.

passages, in this region, or the reopening expressing the area of a triangle in terms of these canals in later life. The first of its sides detectable sign of a H. is a swelling due to a bowel containing air or solid sub-stance. Not infrequently, however, the first symptom is obstruction of the bowel. The term 'a twist of the bowel ' may be due to this fact, because the twisting or blocking may occur at any moment and necessitate surgical interference. common saying that a person with a rup-ture is in the condition of a man with a ture is in the condition of a man with a packet of gunpowder in his pocket, which may go off at any moment. The presence of a rupture may prevent admission to some forms of gov. employment, and in the case of insurance a considerably increased premium is required. In early life ruptures may close with the aid of a suitably made and fitted truss. In healthy individuals, when a truss falls to cure, operation is desirable, and if the truss caunot close the aperture, so as to retain the bowel in the abdomen, operation is necessary. As in these circumstances the operation is performed under favourable conditions, it differs from one undertaken from emergency and urgency, when the bowel is obstructed (twisted). This, the 'radical' cure, is in most cases, rins, the radical curv, is in most cases successful. A rupture may cause obstruction of the bowel, or the bowel may be strangulated, when a portion of its wall is gripped so tight that death of the gripped part, and of the patient, results.

Hernia (in horses), see under Horse

Hernia (in horses), see under Horse (Diseases).
Hernici, It. people of Sabine origin, dwelling in anct. Latium in the Apennines between the Trerus and Lake Fuchus, about 60 m. from Rome. They made an equal alliance with the Roms. In 486 B.C., remaining loyal till 362. They then rebelled, and though falthful during the Lat. revolt in 340, later joined the Samiltes against the Roms. by whom they were subdued in 306 B.C. In 211 they received the rights of Rom. citizens. Anagnia was their cap. N. dwelt the Æqui and Marsi, and S. the Volsei.
Hernosand, seaport th. of Sweden, cap. of the lan of Vesternorland on the W. coast of the is. of Herno, in the gulf of Bothnia. Pop. 12,000.
Hero, see Hernote.

Hero, see HEROIC

Hero and Leander, 'the Juliet and Romeo of the Dardanelles.' H. was the romeo of the Dardanelies. It. was the priestess of Aphrodite at Sectos. L., a beautiful youth of Abydos, saw and fell in love with her at a festival of the goddoss. Guided by a lamp, L. swam across the Hellespont nightly to visit II., but one stormy night was drowned. In despair she cast herself from her tower and perished with him. The romantic poems of the Alexandrian period dealt with the tragedy.

Hero (Heron) of Alexandria: (1) Noted Gk. matchematician and writer, probably of the latter half of the first century A.D. He was especially skilled in geometry, mechanics, and pneumatics, and famous for inventing various machines and contrivances, such as "Hero's Fountain," a schoolmaster, temple attendant, shoetramengine, a water-clock, and other Though H.'s name had long been known, automata. H. discovered the formula fragments only had survived till the

$$\sqrt{s(s-a)(s-b)(s-c)}$$

(a, b, c being the lengths of the sides, s the semi-perimeter). (2) 11. the Younger (fl. seventh or tenth century A.D.), probably a Byzantine land-surveyor, or a philosopher and writer on astronomy and warfare.

Herod, or Herodes: (1) Herod the Great (c. 73 B.C.-4 B.C.), King of the Jews, so called from his great power and talents; became governor of Galilee in 47 B.C. After the death of Julius Caesar, he was made king of Judwa by Antony (40 B.C.), but only made himself master of Jerusalem of the A. R. Allender of Jerusalem of the A. Allender of Jerusalem of J after a prolonged siege. He rebuilt the temple with great magnificence, and erected a theatre and amphitheatre in the city, where games in honour of Augustus were celebrated. The N.T. tells how he ordered the massacre of the Innocents at Bethlehem, and of his dreadful death in 4 B.C. (Matt. ii). (2) Herod Antipas, son of H. the Great, and appointed Tetrarch of Galileo on his father's death. He put of Galileo on his father's death. He put to death St. John the Baptist because he censured H.'s marrage with his brother Philip's wife, Herodias. In A.D. 38 he tried to obtain the title of king, stimulated by the ambition of Herodias, but his nephew, Agrippa, prejudiced the Emperor Caligula's mind against him, and he was stripped of his dominions and exiled. (3) Herod Agrippa I., grandson of Salome, sister of H. the Great. In A.D. 38 Caligula gave him the title of king and conferred on him the dominions of H. the Great. This was that H. who caused St. James to be put to death and St. Peter to be imprisoned. He died at Crearca in A.D. 44. (1) Herod Agrippa II., son of the foregoing. He was reduced to a Rom. proy. on his father's reduced to a Rom. prov. on his father's death, being too young to govern Judges, and later was made superintendent of the temple at Jeru-alem, and had the power of nominating the high priests. He lived a good deal in Jerusalem, but was driven from the city in the revolt which ended so fatally for the Jews. In the war (A.D. 67) he took the Rom. side, joining Cestius, the Rom. commander. He rendered great services to Titus during the siege of Jerusalem, and after its capture in A.D. 70

Jerusalem, and after its capture in A.D. 70 returned to Rome, where he is said to have died about A.D. 100. With him terminated the Herodian line. See C. Noldins, History of Herod the Great, 1754; H. Willrich, Das Haus des Herodes, 1928. Herodas, or Herondas, Gk. poet of the third century B.C., belonging to the Alexandrian school. He was a writer of mimes, realistic dramatic scenes of everyday life, much in the style familiar from the celebrated idyli, Gorgo and Practice of Theoeritus, of whom he was a younger Theoritus, of whom he was a younger contemporary. They are written in racy

discovery in 1891 of a papyrus MS. in El Fayun, Egypt. The mimes are vivid clean-cut skotches in dialogue, some 100 lines each in length frequently coarse but obviously drawn with unfinching realism done of Greece and Persia. Books V. to obviously drawn with unflinching realism from life. The parody of a scene in a Gk. court of law, mime II., the little servant-maid's tactful wit, mime, V., are good examples of H.'s powers. The MS. was ed. by Sir F. G. Kenyon, 1891. See also eds, by O. Crusius, 1905; by J. A. Nairn, 1904, the latter with notes introduction, etc., and verse trans. by H. Sharpley in A Realist of the Eggen, 1906.

Herodes Attous, see ATTIOUS HERODES. Herodian, or Herodianus, Gk. historian of the third century A.D., author of a hist. of the Rom. empire from the death of Marcus Aurelius to Gordianus III., A.D. 180-238. Little is known of his life except that he held subordinate office in Rome, A.D. 203. His work is valuable as a contemporary continuation of the lists of Dion Cassius, but his omissions, e.g. of the growth of Christianity, etc., are striking.

Herodians, political party of Jews, who were adherents of the blumous description.

were adherents of the Idumæan dynasty and warm supporters of Herod the Great. and warm supporters of infroit the Great.
In the N.T. they are mentioned with the
Pharisees as being hostile to Jesus (Mark
iii. 6; Matt. xxii. 6). They were also
called Borthuslans by the rabbis because
they were friendly to the family of

they w Bothus,

Herodotus (r. ''4-c.125 B.c.), Gk. historian, sometimes called the 'father of history,' b. at Halicarnassus, a dependency of Porsia in Asia Minor. He was the son of Persia in Asia Minor. He was the son of Lyxes and Rheo (or Dryo), and the nephew of the epic poet Panyasis, who was put to death by the Persian tyrant, Lygamis, on a charge of treason (c. 457). About the year 464 he left Halicarnas-us About the year 404 he left inflications and travelled in Greece and in foreign countries. He visited Athens Corintly, and Thebos, and other great cities of Greece and the important is, of the archipelago. He also journeyed through Macedonia and Thrace to the shores of the Black Sea, and travelled inland to Susa, the cap. of Persia, Babylon, and then southwards to the anet, city of Tyre through Palestine to Egypt. He also visited S. Italy and Sicily, but the dates of his various journeys are quite uncertain. H. thus had a personal knowledge of the countries of which he wrote. On his travels he collected a great amount of geographical, ethnological, and archaeological knowledge, of which he made such excellent use in his hitt. We know very little with certainty about the facts of his life. It is probable that he resided in the is, of Samos about 437, thus putting him-self under the protection of Athens. After self under the protection of Athens. After six or seven years he returned to Hall-carnassus, and, according to Suidas, took an active part in the expulsion of Lygdanis. He became a member of the Athenian confederacy, but about 447 went to Athens in the hone that he damis. He became a member of the Athenian confederacy, but about 417 went to Athens in the hope that his writings would be more appreciated there then they had been in his native place. In 445 he was voted a sum of ten talents (£2400) as an acknowledgment of his genius. In 443 he assisted in the foundation of the Corneille and Mollère. It has a marked

IX. relate the hist. of the two great wars of the Persian invasion. His style is very discursive, and he expatiates with creat charm on the climate and geographical features of the various countries graphical reatures of the various countries to touches upon, as well as upon the manners and customs of the strange people who inhabit them. His hist, has always been praised for its style, which owes its attraction partly, no doubt, to the fact that it was written primarily for recitation. Its veracity has not infrequently been questioned. With regard to anet, hist, he was no doubt very creduious, but his account of the two Persian lous, but his account of the two Persian wars is accepted as the great authoritative version by all modern historians. He was very diligent in collecting materials for the early part of his hist, but lacked judgment. This hist, was first trans, into Eng. by Hittohymy in 1727 (Spron Really). ment. This list, was first trans, into Eng. by Littlebury in 1737. Canon Rawlinson's trans., 1858-60, has many valuable annotations. The best cds. of the text are those of H. Stein, 1869-71, A. H. Sayce, 1883; R. W. Macan, Herodotus, (iv.-vi., 1895; vil.-ix., 1908); C. Hude, 1908; and A. Godley (with Eng. trans.), 1921-24. See J. Rennell, Geography of Herodotus, 1800; J. B. Bury, Ancient Greek Historians, 1908; W. How and J. Wells, A Commentary on Herodotus, 1912; and A. W. Lawrence, Herodotus; Rawlinson's Translations, Rivised and Annotated, 1935; J. E. Powell, Herodotus, 1939, 1949.

Heroic, having the qualities of a hero. In classical mythology a hero was something between a god and a man, not quite equal to the former, but raised above the latter by his superior strength, courage, and intelligence. The qualities that go to make a hero may be divided into two classes, the physical and meta-physical. In anct. times the former alone were taken into account; a man who possessed great physical strength and courage coupled with daring and determination was H., whether in other respects he was good or bad, so that in olden times the majority of heroes were warriors. In later times it came to be understood that certain other qualities also went to the making of heroes, and moral courage and integrity were held to be the attributes of heroes equally with physical courage and daring. So that on one hand we have the heroes so that on one hand we have the heroes who have won the coveted title by their superior physical qualities, their courage, fortitude, and daring, and on the other, those who may be devoid of all the great physical qualities, but who possess moral courage, fortitude, and determination beyond their fellows, and who are equally, if not more worthy of the title. if not more, worthy of the title.

tendency to long rhetorical and de-clamatory speeches, and its vehicle is the heroic couplet. The link with the Elizabethan drama is Davenant, whose Albovine (1629) possesses all the char-acteristics of the heroic drama except the clamatory speeches, and its vehicle is the bis dormant. See B. Jouvin, Héroid, sa vic et ses œuvres, 1868. Heron, name given to the species of ciconiiform birds belonging to the family Albovine (1629) possesses all the characteristics of the heroic drams except the heroic couplet. In his preface to the Conquest of Granada, 1070, Dryden asserts that 'an heroic play ought to be an imitation in little of an heroic poem, and consequently that love and valour ought to be the subject of it.' Dryden was the chief exponent of the H, P., which had its vogue between 1660 and 1680. His chief plays of this sort are: The Indian Quen (1661), Trunanic Lore or the Royal Martyr (1669), The Conquest of Granada (1670), and Aurengzebe (1675). In the last-mentioned play, Dryden confessed himself 'weary of his long-loved mistress, Rhyme,' and henceforth devoted himself to blank-verse tragedy. In 1671 the duke of Buckingham and other wits had purodied the H. P. in a delightful burlesque, The Rehearsol. Heroics, however, still flourished, until the great craftsman, Dryden, deserted rhyme for blank verse. Nevertheless, the H. P. had not entirely disappoared by the end of the century. See J. Maldment and W. Logan, Dramatists of the Restoration, 1873, and W. Kor, Essays of John Dryden, 1900.

Heroic Verse, in prosody, is applied to rhymed iamble couplets, often called heroic couplets. It was first used by Chaucer in the Legend of Good Women. It attained

raymen faminic conflicts, often canet across couplets. It was first used by Chaucer in the Legend of Good Women. It attained its most polished form with Dryden and Pope, but has since been used with great freedom by Byron, Keats, Swinburne, and

Heroin, or Discetylmorphine, drug obtained from morphine and administered by injection. Acts in much the same way as morphine, but on account of its special influences on the nervous system of the influences on the nervous system of the breathing apparatus it is used to relieve paroxysms of coughing. The drug liabit is sometimes so acquired. In 1931 the Conference on the Control of Narcotic Drugs drew attention to the highly dangerous character of H. as a drug of addiction, and the Permanent Opium Board in 1949 pub. a report which noted an alarming increase in its use.

Heroid, Louis Joseph Ferdinand (1791–1833), Fr. musician and compuser, b. in Paris, son of an accomplished manust (a

Paris, son of an accomplished paunst (a pupil of C. P. E. Bach). He studied at the Paris Conservatory, under Mehul, and in. 1812 gained the Grand Prix de Rome with a cantata, La Duchesse de la villure. He then went to Italy and also visited Vienna. His first opera was La Uicontu di Enrico V., first produced at Naples (1815) with moderate success. In Paris he collaborated with Boieldieu in writing an opera entitled Charles de France. His arst Fr. opera was Les Rosieres (1817) which had a good reception. This was followed by many other works, of which the best known are: Zampa (1931), which was immensely successful in France and also in German, where it is considered his masterpiese; and Le Pri aux Cleres (1832), a graceful and lively work. Other works include the operas La Clochette

Ardeldee; they are characterised by long Ardeldes; they are characterised by some necks and legs, slender hodies, and beautiful plumage. They frequent lakes, fens, and the mud-flats found on sandy shores, where they wade into the water and often stand ankle-deep for a considerable time, searching for prey; they capture fish, molluscs, worms, etc., by spearing them with their long bill, and their appetite seems insatiable. Hs. nest on trees, bushes, ivy-covered rocks, or reeds, making a loose fabric of sticks lined with gruss, leaves, etc.; they lay greenish or drab-coloured eggs, varying in number from two to seven with the different species. Ardea is the largest genus, and its distribution is worldwide; A. cinerea, the common European II., is found also in Africa, Asia, Japun, and Australia; white Hs., or extets, are generally smaller than other species. A. garzetta being the smallest of all; this beautiful bird, which is called the little egret, has long flamentous plumes and two lengthened crest feathers, which are said to be temporarily lost after breeding; this species is occasionally found in Britain; species is occasionally found in Britain; A. allo, the great white H., ranges from Central Europe to Africa and Asia; A. occudentains, the white H. of Florida, is an even larger bird; A. golinth, probably the largest of all species, has a reddish head, and under-surface. The genus neck, neck, and under-surface. The genus Nycticorex, or might Ha., are remarkable for the long, occupital feathers, blackish or white in colour, which are lost for a time after breeding; the species vary greatly in colouring, N. griseus, which occasionally visits Brit. shores, being greenish-black Holaurus, the bitterns, and Balarnicens, the snoebills, belong to the same family as it. H۶.

Heron, Boatbilled, see BOATBILL.

Herondas, see HERODAS.
Herophilus (335-280 B.C.), physician, who was founder of one of the earliest schools of medicine in Alexandria. He was a Gk. of Chalcedon and a follower of was a GK, or Chaicedon and a follower or Hippocrates, and was famous for his re-searches in anatomy, though he seems to have been equally -killed in the use of drugs. See C. F. Mary, Herophilus, 1838. Herostratus, Ephesian, who so hungered for notoriety that on the night of the birth of Alexander the Great (3.58 B.C.) he set fire to the temple of Artenis at Ephesus.

Herpes, see Shingles.

Herpes, see Shivilles.
Herpetology (ilk. spector, a reptile, and hour, speak), science which treats of reptiles, their habits, structure, and distribution; it is sometimes extended to include certain amphilians, such as the Datasation Continued Shapeton of the structure. Batrachia. See also under REPTILES.
Herpeton, see ERPETON.
Herrers, vil. in the dist. of Estape and

rierrera, vit. in the dist. of Estape and prov. of Seville, Spain. 1 Pop. 5900.

Herrera, Fernando de (c. 1534-87), Sp. lyrical poet, known ab El Divino, the Divino, b. at Seville. He had a protound admiration for the It. poets and took a

large share in introducing their metrical systems into Spain. His odes, especially those on the Battle of Lepanto and Don John of Austria, and his elegies on King Sebastian of Portugal and Sir Thomas More, are marked by grandeur, melody, and profundity, and entitle him to rank as the greatest of Andalustan poets. All his works are printed in the Biblioteca de autores españoles, xxxii. See A. Laso de Vega, Historia de la Escuela Poetica Serilana, 1876, A. Morel Fatio, L' Hymne sur Lepante, 1933, and R. Marin, kl Divino Herrera y la Condesa de Gelres, 1911.

Herrera, Francisco de (1576–1556, surnamed El Viejo (the Elder), Sp. historical and freeco painter, b. in Sevillo. He was a man of such violent temper and coarse manners that noither his children nor large share in introducing their metrical wit about court or in the Mermaid systems into Spain. His odes, especially Tavern (q.v.). Some time before 1627 he those on the Battle of Lepanto and Don John of Austria, and his elegies on King the sailed as chaptain to the action of the sailed as chaptain to the condition of the sailed as chaptain to the sailed as chaptain the sailed as chaptain to the sailed as chaptain the

manners that noither his children nor pupils would remain with him, although both his son and Volasquez learnt from him his energy of design and bold, vigor-ous touch. His skill as a worker in bronze led to his being accused of coining false money, and he sought refuge in the Jesuits' College, Soville, which he adorned with his celebrated 'St. Hermengild in Glory, and which won him the pardon of Philip IV.

Herrera, Francisco (1622-85), surnamed El Mozo (the Younger), to distinguish him from his tather 'El Viejo,' b. at Seville, from which he fled to Rome on account of from which he fied to Rome on account of his father's runtity. He became renowned fo. his privace of still lite. flowers, fruit, and fish. He also painted frescoes, and, in later life, portraits. On his return to Seville he became subdirector of its academy under Murillo (1660). His best picture is, perhaps, the 'San Francisco' in Soville Cathedral. His 'Assumption of the Virgin' in the Atocha church in Madrid, won for him the title of painter to the king.

Herrera y Tordesillas, Antonio de (1519–1625), Sp. historian, b. at Cuellar, Segora, Spain. He became secretary to Vespasian Gonzago, who commended him to Philip

Gonzago, who commended him to Philip II. of Spain, by whom Herrera was ap-

Herreria, see La Union.
Herreros, see Herero.
Herrick, Robert (1591-1674), Eng. poet.
b. in Cheapside, London, was the son of a London goldsmith. In 1607 he was apprenticed to his uncle, one of the richest goldsmiths of the time, and during his apprenticeship joined the band of poets and with who surrounded iten Lorson. apprenticed to his uncle, one of the richest polariths of the time, and during his apprenticeship joined the band of poots and wits who surrounded Ben Jonson. Herrin, post tu., Williamson co., and wits who surrounded Ben Jonson. Hillinois, U.S.A., 7 m. N.W. of Marion. It is served by three railways, has coal mines, commoner of St. John's College, Cainbridge, and subsequently removed to machine shops. Agriculture and dairying are also carried on. Pop. 3300.

Herrin, post tu., Williamson co., Herrin, post tu., W. of Marion. It is served by three railways, has coal mines, commoner of St. John's College, Cainbridge, and subsequently removed to machine shops. Agriculture and dairying are also carried on. Pop. 3300.

Herrin, post tu., Williamson co., foundries, saw mills, a powdor plant and machine shops. Agriculture and dairying are also carried on. Pop. 3300.

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Herrin, post tu., W. Williamson co., foundries, saw mills, a powdor plant and machine shops. Agriculture and dairying are also carried on. Pop. 3300.

to the Isle de Rhó. From 1629 to 1648 he was vicar of Doan Prior, near Totnes, Devonshire, where he wrote his immortal lyrics of the countryside and rural customs. He was ejected by the Puritans, but returned to Dean Prior in 1662 and died there. Some poems of his were pub. in 1635, but it was not until 1648 that he pub. 1635, but it was not until 1648 that he pub-the Hesperides: or the Works both Humane and Divine of Robert Herrick. His 'divine' poems ring less true than the 'human' ones, which, written partly under the influence of Ben Jonson, but chiefly modelled on the pagan poets, possess an exquisitelyric quality, and place him at the head of Eng. pastoral lyrists. Among his most, famous lyrics may be Among his most famous lyrics may be mentioned 'Bid me to live,' (tather ye itosebuda' and 'Cherry Itipe.' The most delightful of hedonistic clerks, H. loved to represent himself as a Rom. priest uttering erisons to Jove or paying yows to Mars and Neptune and adding to this conceit, a company of mistresses who, when occasion demands, don the chaplet of priestesses and bury him with due classic rites. H.'s poetry reflects the frank priestesses and bury him with due classic rules. It's poetry 'reflects the frank hilarity of the Golden Age unprececupied with desire and therefore unafraid of it' (John Buchan). He is happiest in themes which admit of quasiclassical treatment but his religious verse for the most part is interior to that of Herbert and Henry Vaughan. Complete works ed. by W. C. Hazhit, 1869, 1890; collected poems ed. by G. Saint-bury, 1893; L. Magnus, 1899; F. W. Moorman, 1915, 1921; and H. Wolfe, 1928. See F. W. Moorman, Robert Herrick, 1910; L. Mandel, Robert Herrick, the Last Elizabethan, 1927; E. Blunden, 'Herrick,' in Folive Tablets, 1931; E. I. M. Easton, Fouth Immortal, I Life of Robert Herrick, 1936.

1 Life of Robert Herrick, 1936.

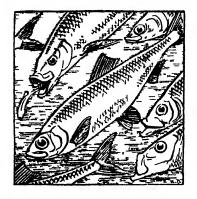
2 Life of Robert Herrick, 1936.

3 Life of Robert Herrick, 1936.

4 Life of Robert Herrick, 1936.

II. of Spain, by whom a pointed historiographic of the Indies and pointed historiographic of the Indies and of Castile. His most valuable work is allowed the control of the Reformed party and a friend of John Lagos en las islas y tierra firme del Mar Cocano (Madrid, 1601-15, trans. into Eng. He not the Reformed party and a friend of John 1740). He also wrote Historia general del Mary and foined her at Dun'sar. He led 1740. He also wrote Historia general del mando del tiempo del Senor Rey Don Pelipe II. (1601-02). See W. N. Prescott, Lind in 1568. On his return to Scotland Conquest of Mexico. II., 1843 and E. He laboured in Mary's cause and was impressed by the Regent of Mexico. II., 1843 and E. He laboured in Mary's cause and was impressed by the Regent of Mexico. II. 1578. death in 1581 was closely albed with the death in 1581 was concey amos a Mary's Regent Lennox in his schemes for Mary's release. political For his own version of his conduct see his Historical Memoirs printed by the Abbotsford Club

In size it is moderately small, and has thin, silvery scales which do not extend to thin, silvery scales which do not extend to the head, small teeth and open gills. It has only one dorsal fin and one short ventral, and there are no spines in the fins. It keeps close to the surface of the sea, swimming high in the water. The lower edge of the II. is flattened, and covered with bony plates varyingly sharp or serrated. It feeds like the whale by straining the water through its long gill-rakers, which form a dovetailed screen



capable of arresting the copepoda. It deposits its eggs on the bottom, which hatch out adhering in masses to stones and weeds. Its colour varies between a not weeds. Its colour varies between a not very pronounced green and blue, and its scales detach when the ilsh is roughly handled. It is a coldwater fish, and develops to a larger size in more N. lats. In the Channel it averages 12 in.; in parts of the N. Ses it reaches a length of 17 in. Those caught off the Brit. Isles are smaller than those caught off Iceland, these latter being harge and coarse. Ha are smaller than those caught off Iceland, these latter being large and coarse. Hs. are usually caught by drift-nets, but the hook and line is sometimes used, and the ligger is often employed on the Scottish coast. Hs take about two years to reach maturity, their silvery scales appearing when they have grown to a length of about 1 in. The number of eggs deposited by the female varies from 20,000 to 50,000, and the eggs are oneaue and have a by the female varies from 20,000 to 50,000, and the eggs are opaque and have a thick adhesive envelope. This fish is found in large quantities off the shores of the Brit. Isles, as well as along the E. border of N America, up to the const of Behring Strait, and is known in the White Sea of Russia and down the coasts of Norwey and Downerk and in the sea of way and Denmark, and in the sea of Japan, but it is not found in the Mediterranean. It is essentially a migratory fish, never remaining in any dist. for more than a few days, and is not influence d in this by latitude or Himate, for often it is earliest comets, live undoubtedly unobserved bein the further N., and in others the restore, and many of the smaller nebules and verse. The spawn is shed twice in the star clusters included in her brother's year, of which that of the autumn is the catalogue were her discoveries. In 1798

more conspicuous; but the season of either of these is often extended or delayed beyond the regular time. Hence, great vigilance, patience, and skill are needed in the capture of this fish. Hs. formed an important source of income in anct. times, and have been used as food from time immemorial The H. is rich in easily digestible oil: factories have been estab. for its extraction and preparation for human use. Sec also Fightries, SEA

Herring-bone, term used in architecture to describe an arrangement by which bricks, stones, wood-blocks, etc., are laid diagonally. Generally speaking, the members all make an angle of forty-five degrees with the general direction of the row, and are at right angles to the mem-

bers of the row next to them.

bers of the row next to them.

Herrict, Edouard, Fr. statesman; b.

1872, at Troyes (Aube). Prof. of rhetoric
at Nantes; then at Lyons—where he
became councilor, 1901; mayor from 1905
(frequently re chosen). In 1910, councillor for dept. of Rhône; in 1912, senator.
Led radical-socialist party. Premier, May
1921 till April 1925. Elected president
of Chamber of Deputies. Secured defeat
of Briand Gov. July 1926; formed a
ministry that lasted two days and fell
on account of an acute crisis in Treasury.
Entered new ministry, formed by Poinon account of an acute crisis in Treasury. Entered new ministry, formed by Poincaré, as minister of public instruction, but in 1928 his party compelled him to withdraw. In 1932 he was again Prime Minister, and from 1934 to 1936 minister without portfolio; in 1935 he left the Radical-Socialist Party, but was received in 1915. Hi was president of re-elected in 1915. H. was president of the Chamber 1936-10. He was deported by the Gers in 1943. In 1946 he was again elected president of the chamber. again elected president of the chamber, Works 'Philon le Junf (1897, crowned by Academy); Mme. Récamer et Ses Amis (1903), Précis de l'Histoire des Lettres Françaises (1905), 1gir (1917), Créer (1919), La Russie nouvelle (1922), La Forêt Normande (1925), Lyon n'est plus, 1792-96 (Lyons during the Fr. Revolution 1927-1940), Sous l'Olivier (1930), The Wellsprings of Liberty (1946).

Herrihut, in in Saxony, Gormany, 18 m. S.E. of Bautzen. It is chefly noted as the beadquarters of the 'Herrihuter,' a branch of the Moravian Brethren, founded here in 1722. Before the Second World War, in which it suffered great destruction, it had manufe. of linen, paper, and tobacco. Pop. 1509.

and tobacco. Pop 1500.

Herschel, vil. and dist. in Cape Prov.
S. Africa, the vil. lying 30 m. E.N.E. of
Aliwal N. The dist. has an area of about 800 sq. m. and is bounded on the N. by the Orango R. Pop. 40,000 (white pop.

Herschel, Caroline Lucretta (1750–1848), sister of Sir Win. H., whom she assisted in his astronomical observations, b. in Hanover. She lived with her brother at Bath from 1772, and acted as his assistant when he was appointed astronomer-royal. tween 1786-97 she discovered eight comets, five undoubtedly unobserved before, and many of the smaller nebules and

she pub. for the Royal Society Catalogue of Five Hundred and Sixty one Stars observed by Flamsteed In 1928 the Astronomical Society awarded her their gold medal, and elected her an honorary memor in 1835 When her brother Wm died she returned to Hanover and began, it the age of seventy five, to catalogue all the heavenly bodies observed by him See Mrs John Herschel, Memor and Commenced and 1878

the heavenly bodies observed by min see Mrs John Herschel, Memor and Correspondence of Caroline Herschel, 1876. Herschel, St. John Frederick William (1792–1871), Fing astronomer, son of Sil Win II, b at Slough, Bucklinghamshire, and educated at Etion and St. John's College, Cambridge, where he graduated as senior wrangler and Smith's prizement 1813. He entered his name at Lincoln Inn in 1814, but took up astronomy in 1816, when he trans S. F. Laciot's Flementary Treatise on the Differential Calculus, with an appendix ou 'Finite Differences,' succeeded by two vols of Ix amples in 1820. In 1821 he was appointed Copley medallist by the Itoyal Society Irom 1825 to 1833 he was engaged, with Sir James South, in reviewing the nebul and star clusters of his father's catalogues In 1834 he estab an observatory at keld hausen, nou cape Town, where he spent four vers in a review of the S heavens, the results of which were pub in 1847 as Results of Astronomical Observations made at the Cape of Astronomical Observations made at the Cape of Astronomical Observations works of the nineteenth century. He was appointed master of the Mint from 1830 to 1855. He was the inventor of virious astronomical instruments, sensitised piper and the use of hyposulphito of soda for fixing in photography, and he minde valuable researches on the undultor theory of light. His miscelleneous I ssay were pub in 1857, and Pamular I cetur on Scientife Subjects in 1857.



SIR WILLIAM HERSCHIFL
Ingraved by 1 Seriven from a crayon drawn
by J kuss II

Herschel, Sir William (1738–1822), Fig the origin of the name of this tn , and in astronomer, b. in Hanover. He was educated as a professional musician, and when It was reduced by the Danes sev times,

he came to Lngland in 1757 taught music in Leeds, Halifax, and other N tas In 1766 he was appointed organist at the Octagon Chapel, Bath. At Bath he turned his attention to astronomy, and, with the sid of his ster and a new telescope which he constructed for himself, beg in his survey of the heavens. In 1781 he discovered a new planet, the Georgum Sidus (since called Uranus), and sev. of its satchites In 1782 he was appointed private astronomer to George III, and went to live at Slough, where he continued the observations, discovering two of the stellites of Saturn, the phenomenon of the motion of the double stars round one nother, the periods of rotation of Saturn and Yenis, the constitution of nebula, and much interesting matter about the Milky Way In 1783 he pub his Motion of the Satur System in Space He received the Copley medal in 1781 In 1789 he creed his famous telescope of 40 ft. focal leigth and 4 ft. aperture See L S Holden, William Herschel in 1891, Jame, William Herschel and Hork 1891, Jame, William Herschel and Hork 1891, Jone, J. L. E. Drever, A Short Account of Sir William Herschel Infe and Work, 1912

Herschell, Sir Farrer Herschell, Baron (1837-99), lord ligh chancellor of Great Bartin, b at Brainpton, Hampshire In 1860 he was called to the Bar and Jone,

Hersohell, Sir Farrer Hersohell, Baron (1837-99), lord high chancellor of Great lintain, b at Brainpton, Hampshire In 1860 he was called to the Bar and Joined the N circuit, in 1872 he was made Queen's Counsel. He was recorder of Carlisle (1873-80), member of parliament for Jurham (1874-85), and Solicitor (circal (1880-85) In 1886 he was lord hincellor for six months, falling with Glidstone's administration in that year, intricturning to the Woolsack with the liberal administration (1592-95). He was appointed a member of the Anglo Venezuelan Arbitration Commission in 1948, but while at Washington met with a accident which proved itaal. See J B Miav, The Victorian Charcellors, 106-08 Hersfeld, Bad, in in Hossen, Germany, in the River Fulds, 24 m N N E of Iulda It was famous for its Benedictine hiller founded by Lullus, 76) a pand

n the River Fulds, 24 m N N E of I ulda It was famous for its Benedictine the country founded by Lullus, 76 h D, and culatised in 1648 It is noted for manufs of cloth, leather, and machinery thing springs are found here Pop 1, 400

Herstal, the of Belgium and suburb of luge, 4 m to the N L of that city, on the Youse I is the stoff the Belgian small rins factory and cumon foundry, and is coal mines, manufs of iron and stoel it is the reputed by of Pepin le Gros It ilso claims to be the by of Charlemagne Pop. 27,200

Herstmonceaux, see HURSTMONCFAUX.
Herten, tn, Westphalla, Germans, 15
m W.N W of Dortmund Pop 35,000
Herstord ('ford of harts'), municipal
for and co tn of Herstfordshire, is situited on the R Lea about 21 m N of
London and 2 m from Ware It is
cosentially an agric tn, and is noted for its
corn mrkt, but it has no manufe of im
portance The 'harts ford' is probably
the origin of the name of this tn, and in
axon times it was a place of importance
It was reduced by the Danes say times.

and the wall of the castle built by Edward the Eider still remains. Halleybury College, founded in 1806 by the E. India Company as a training school for its civil service, and which is now a public school, is

Heriford College, Oxford, in its present form is a modern foundation. Between 1283 and 1300 Elias of Hertford acquired one of sev halls which stood on the site and which became known as Hart Hall. In 1312 it was bought by Bishop Stapleton, the founder of Exeter College, on which college it was dependent until the second half of the sixteenth century. In 1710 Richard Newton became principal and, in spite of strengous opposition, suc-ceeded in obtaining a charter to estab. Hortord as a college in 1740. It lapsed in 180° and the buildings were acquired by Magdalen Hall, which was itself dis-solved in 1874, when its principal and scholars were incorporated as part of the new Hortford College.

Herifordshire, or Heris, inland co. of England, bounded on the N. by Cambridgeshire, on the R. by Essex, on the S. by Middle-ex and on the W. by Bu kinghamshire and Bedfordshire. The surface is hilly, but there are some fine pasture is hilly, but there are some fine pasture lands and preturesque parks and woods. It belongs mainly to the Upper Cretaceous rocks, which give place in the S. to the London clay. The print rive are the Lea the Colne, and the Ivel, and the Grand Junction (anal passes through a part of the co. The chief industry is agriculture, and in addition to grain of a choice quality, hav, vegetables and numerous fruits are grown for the London mrkt. There are a few manufer, straw-plat, silk and paper, together with brewing, tanning, parchiment-making, being the chief. The only industries of importance is brick-earth. In 896 a battle took place in this co. between Airrod and the Danes, and in the Wars of the Roses the buttles of St. Albans and Barnet were fought here. It Albans and Barnet were fought here. It is divided into six parl. divs., Hencel Hempstead, Hitchin, Hertfold, St. Albans, Watford and S.W. Hert- one memberforeachdiv.; and one bor. constituency.

watford. Pop. 567,000.

Hertha, or Nerthus, in Tentone mythology was the goddess of tertility, 'Mother Earth.' Tacitus describes her worship, the chief seat of which has not been destribed.

been identified.

Hertling, Georg Friedrich, Count von (1843-1919), Ger. Chancellor; b. at Darmstadt; son of Jakob, Baron von 11. Began as an ultramontane teacher it Bonn; Extraordinary 1 rof. of Philosophy, 1880; Ordinary 1 rof., 1882. He was to that time a mender of the Rochstag, and he time a menther of the Referstag, and he ultimately hecame leader of the R.C. Centre Party. When Michelis was dismissed the Chancellorship, Kanser Wilhelm made H. Chancellor, Nov. 1, 1917. His period of office covered Germany's most successful time in the First World War. He resigned Sept. 30, 1918. Wrote ser, philosophic works of a Neo-Thomist Kind. See his autobiography. most successful time in the First World ised, and diffracted just as light is, and he War. He resigned Sept. 30, 1918. Wrote ser. philosophic works of a Neo-Thomist ident. See his autobiography. Arrise-light and of radiant heat. The results of russpen aus meinem Leben, 1919-21, and his observations have been employed for

A. F. Eickhoff, Hertling als Sozial politiker.

1832.

's Hertogenbosch (Bois-le-Due), city of Holland, cap. of the prov. of N. Brabant, situated at the confluence of the Aa and Dommel, 28 m. S.S.E. of Utrecht. The city is well built and is crossed by sev. canal. In St. John's church (founded in the early fourteenth century) H. has one of the finest medieval churches in Holland. There are sev. other churches, a fine to.and sov. other conreces, a line thall, an episcopal palace, a court-house and gov. buildings which were formerly a monastery. H. had its origins as a hunting-lodge of the dukes of Brabant, it gradually increased in importance and in 1154 was raised to the status of a tn. and fortified with walls. In the mid-fliteenth century it was considerably enlarged. Numerous abortive attempts were made by the Netherlands to get possession of the tn, in the sixteenth and seventeenth conturies, but at length in 1629 it was taken after a five-months' siege. It fell to France in 1794; to the Prussians in 1814; and after Ger. occupation in the Second World War, to the British forces in the nutum of 1944. Pop. 53,300. Hertwig, Oskar (1819-1922), Ger. anatomst and embryologist; b. at Friedberg in

Hesse. Prof. of anatomy, Jena, 1878; at Berlin, 1888. In 1876 pub. Beitrage cur Kenntnis der Bidtung, Befruchtung und Theilung des thierischen Eier, which and Theilung des threischen Eier, which for the first time explained the mechanism of fertilisation. His other works include. Die Zeile und die Genebe (1893-1398), and Zeit- und Streifragen der Budogie (1894-97).

Hertz, Heinrich Rudolf (1857-91), Gerphysicist, b. at liamburg. He was intended for the profession of engineering, but described it o study experimental and

but deserted it to study experimental and mathematical physics under Von Helmholtz in Berlin. For the best solution of the problem of electric mertia he won the univ. pize, his paper, Kinetic Energy of Electricity in Motion, being pub. in 1880. In 1843 he was privat dozent (or univ. teacher not belonging to the professional staff) at Kiel, and from 1835 to 1889 prof. of physics in the Karlsrube Polytechnic where he made his remarkable experiments on cle trie waves based on Maxwell's theory of electricity and magnetism, for which the experimental proofs had been lacking hitherto. The result of his experilacking lithesto. The result of ms experi-ments was to prove beyond a doubt that ordinary light consists of electrical vibra-tions in an all pervading ether which possesses the properties of an insulation and of a magnetic medium (Hertzian Electric-Magnetic Waves). The appara-tus which he invented for the purpose was an electric resonator which could pick out and make evident the optiliations of elec-tic discharges which take place under certain conditions, as demonstrated by Kelvin. Having proved that these electric waves existed, he proceeded to show that they could be reflected; refracted, polar-

the practical purposes of signalling over considerably distance (see Wireless Telegraphy). His papers have been trans. Into Eng. by Prof. D. E. Jones, and pub. as Electric Waves (1893), Miscellaneous Papers (1896), and Principles of Mechanics (1899). See Sir O. Lodge, Hertz and his Work, 1895.

Hertz, Henrik (1798-1870), Dan. poet, b, of Jewish parents at Copenhagen. He passed his final examination in law in 1825, but the literary instinct in him was too strong, and in 1826 he pub. his first play. His innor's Strokes of Genius (1830), a comedy in played verso, was a complete in the property of the strokes of Genius (1830). a comedy in rhymed verse, was a complete novelty in Dan. literature, and his Gen-gangerbrere (Letters from a Ghost, pub. in the same year) is one of the best satires in Dan. His romantic national drama, Svend Dyrings Hus (1837), is one of his finest works, while Kong Rene's Datter inest works, while Kong Rene's Datter (1845) has been trans, into almost every European language (Eng. trans. 1850 by Sir Theodore Martin). His comedy, Fluttedogen, appeared in 1828, and his beautiful lyrics were collected in 1857-62. His Dramatir B orks (18 vols.) were pub. 1854-73. See monograph by H. Kyrre, 1018 1916.

1916.
Hertz, Joseph Herman (1872-1946), Jewish chief rabbi; b. at Rebrin in Czechoslovakia (then in Hungary); son of Simon H., Hebralst. Emigrated as a child to Ameri. He was educated at the College of the (tty) Now York, Columbia Univ. (Ph.D.), and the Jowish Theological Seminary, New York. Rabbi of the Congregation Adath Jeshurum at Syracuse, New York, 1894-98. Then he became rabbi of Witwatersrand Old Heb. Congregation. Johannesburg. Transvall. Congregation, Johannesburg, Transvaal.
From 1906-08 he was prof. of philosophy at the Transvaal Univ. College. Expelied by Boors as pro-Brit. during S. African war; returned when Brit. were in occupation. In 1019 house of war; returned when brit, were in occupa-tion. In 1913 became chief rabbi for the Brit. Empire. In Zionism H. belonged to the Mizruchi or orthodox party; and he was president of the Mizrachi Fodera-tion of Great Britain and Ireland. A consistent Zionist he was, however, never prominent in the movement, but as an Angle-Jewish leader he was consulted by the Gov. when the Balfour Declaration (q.v.), was in preparation. Of his many writings that which will endure the longest writings that which will endure the longustic probably his anthology, Book of Jewish tarthology, Book of James Martineau (1894), Backya, the Jewish Thomas a Kempis (1898), The Jew in South Africa (1904), The Strange Fire of Schlam (1914), Affirmations of Judaism (1927), Ancient Semitic Codes and the Mosaic Legislation (1928), Battle for the Sabbath at Genera (1932), Hertzberg, Ewald Friedrich, Count (1725-95), Prussian stateman; b. at Lettin. Earther Pomerante of noble

state for Foreign Affairs. He made the treaty of peace with Russia and Sweden in 1762, and carried out many other important negotiations—including a treaty with the U.S.A., 1785. His policy was anti-Austrian, and he favoured limited monarchy. Few were more constantly attendant on Frederick the Great during his last days. Frederick Wm. II., on his accession, made II. a count, Sept. 1786; but H. disagreed with the king's policy, and was dismissed in 1791. H. was exceedingly crudite—wrote on hist, statistics, and political systems; and from 1786 was curator of the Academy, to which he endeavoured to give a more Ger. character. character.

Ilertzog, James Barry Munnik (1866–1912), S. African general and statesman, b. at Wellington, Cape Province, son of atamer. Educated at Victoria College, Stellenbasch, and at Amsterdam Univ. Busine an advocate at Bloemfontein; undge of the Orange Free State, 1895. Commanded Boer forces of S.W. div., S. Afrean war, 1899–1902, and, on behalf of the Free State, was one of the signatories of the treaty of Vereeniging, 1902.



Zadiks Studios

GENERAL HERTZOG

On the grant of responsible gov. to the political leader of the Dutch in the Free rollical leader of the Dutch in the Free State and was always very slow in becoming reconciled to Brit, rule. As minister of justice in the first gov. of the Union of S. Airica, his bitter speeches steadily fanned the embers of racialism, and herearments operated in separation. soum Africa (1904), the Strange Fire strange for schaim (1914). Afternations of Judalem and he vehemently opposed all schemes of (1927), Ancient Semitic Codes and the Mosaic Legislation (1928), Battle for the Sabbath at Genera (1932).

Hertsberg, Ewald Friedrich, Count it was an open feud—Botha and Smuts Lottin, Farther Pomerania, of noble that the seminary of supported H., who now launched the new

Nationalist Party there with secession from the Empire as its main plank. In 1914-18 he stood out against co-operation with Britain, but, being convinced of the impracticability of rebellion, he tried to induce De Wet and Beyers to abstain from it. In the election of 1924 the Nationalist-Labour alliance defeated the rival combination led by Smuts and H. Nationalist-Labour alliance defeated the rival combination leil by Smuts and H. became Prime Minister and minister of native affairs. But he now seemed to have abandoned secession though he declared that the sole link letween the Dominions and Great Britain was the personal bond of a common king—a declaration which he signed at the Imperial Conference of 1926. His chief concern in office was now to advance the controversial policy of 'segregation' of the natives and to this period belongs the Nationalist determination to climinate the Union Jack as the national flag of S. Africa. In 1929 he was returned again with a small majority over all other parties and in 1930 attended the Imperial Conference of that year, declaring on his return that he had now 'done with a republic and republicanism.' He was again in London for the celebration of the sliver jubilee of King George V. In 193; as leader of the Nationalists, he joined forces with Gen. Smuts, leader of the S. African Party, to form a United Party, and his utterances gave the impression that he would stand with the empire in the event of war; but in 1939, when war broke out, H., as Prime Minister, declared for neutrality. He was, however, defeated on a vote of confidence and resigned in favour of Smuts. From that moment his career waned. He now, however, fested on a vote of confidence and resigned in favour of Smuts. From that moment his career waned. He now, however, tried to justify Nazi policy and called on Smuts, in 1940, to withdraw from the war and make a separate peace. This aroused great anger in S. Africa and in Nov., 1910, he resigned from the 'reunited' Nationalist Party a year after he had formed it with Dr. Malan, the new Nationalist leader and an avowed republican, and then resigned his seat in Parliament. At a meeting of the Afrikaner Party in Johannesburg in 1941 he stated that National Socialism was the only solution of S. Africa's economic and political problems, but Havenga, leader of the Afrikaner Party, opposed his view and there was an open break between the two men which finally ended his career. two men which finally ended his career. In spite of his later support of the Brit. Commonwealth and the favourable in pression he made at the Imperial Conferences of 1926 and 1930 it was always obvious that his anti-Brit. sentiment was

obvious that his anti-Brit. sentiment was never far below the surface. It is a curious commentary on his prejudices that he sent one of his three sons to Oxford Univ. See lives by L. E. Neame, 1930, and C. M. Van der Hoever, 1946.

Heruli, Teutonic tribe, first mentioned in the reign of Gallienus (260-68), when they joined the Goths in ravaging the Ægean coasts. In the sixth century they formed an alliance with Theodoric the Ostrogoth against Clovis, king of the Franks, but were overthrown by the Langobardi.

Hervieu, Paul Ernest (1857-1915), Fr. novellst and dramatist, b. at Neuilly (Seine). He was called to the Bar in 1877, and qualified for the diplomatic scruice. His best work is found in a scries of plays, including: Point de Lendemann (1890), Les Panoles Resient (Vaudeville, 1892), Les Tenaulles (Comédie Française, 1895), La Course du Flumbeau (1901), L'Enigme (1901), Théroigne de Méricourt (1902), Le Dédaie (1903), Le Réveil (1905), Connais-loi (1909). Elected to the Fr. Academy in 1900.

Herwarth von Bittenfeld, Karl Eberhard (1796-1884), Prussian general, b. at Grosswerther in Thuringia. He entered the Guard Infantry in 1811, and served through the war of Liberation (1813-15), distinguishing himself at Lutzen and Paris. In 1864 in the Schleswig-Holstein cam-

In 1864 in the Schleswig-Holstein campaign he attained great fame through his daring capture of the Isle of Alsen. In 1866 he commanded the 'Army of the Fibe,' which overran Saxony and invaded Bohemia. He took a leading part in the brilliant victories over the Austrians at Hubnerwasser, Munchengratz and Koniggratz. On the outbreak of the Franco-Prussian war in 1870 he was appointed to organise the reserve forces in the Rhine prov. and in 1871 was promoted to the rank of field-marshal.

Herwegh, Georg (1817-75), Ger. lyric poet, b. at Stuttgart. Originally intended for the church, he went to the univ. of Tubingen, from which he was expelled in 1336, and he then took up journalism.
During his term of military service insubordination resulted in his fleeing to
Switzerland, where he pub, the book of
political poems that, although it was conpointed poems that, atthough it was con-fiscated, made him famous, Gedichte emes Lebendigen (1841). He pub. a second vol. of poems, which like the first was conhecated, and trans. Lamartine's works and sev. of Shakespeare's plays into Ger. into Ger.

Herzegovina, see Bosnia and Heryf-GOVINA.

or Gerzen, Alexander (1812-Herzen, 1870), Russian author and publisher, b. at Moscow. In 1840 he held an official post, but in consequence of too great frankness but in consequence of too great frankness he was sent to Novgorod in 1824, and left Russia in 1847 to pass the remainder of his life between Paris, London, and Geneva. In London he estab, his Free Russian Press, from which emanated a large number of works dealing with the cause of reform in Russia. He wrote Mémoires de l'Impératrice Cathérins II. (1869), and some novels, as well as his political works, His collected Russian works were pub. at Geneva in 1870. See M. Wiedemann, Hersen und der Kolokol, 1935. 1935.

1935.
Herzl, Theodor (1860–1904), founder of modern political Zionism (q.v.), b. at Hudapest. Most of his life was passed at Vienua, where in addition to his fame as a Jewish Nationalist, he also had a high reputation as a journalist and dramatist. His great ideal was to restore the Jewish nation to political autonomy. He treated the subject from an entirely secular standnoint, and did not at first bring Palestine point, and did not at first bring Palestine

Halle, and from there went on to Erlangen as prof. of church hist. (1854). His most famous work was the Itealencyklopadae fur protestantische Theologie und Kirche (1853–68, 22 vols.). In 1877 he commenced a second ed. in conjunction with G. L. Plitt, and on the death of the latter in 1880 Albert Hauck took his place, and after the death of II. pub. a third ed. (1896–1909). His other works include Johann Calvin (1813), Leben Okolampads (1843), Die romanischen Waldenser (1853), and Abriss der gesamten Kirchengeschichte (3 vols., 1876–82, 2nd ed., 1890–92).

Hesban, see II KSITBON.
Hesdin, th. on the Canche, in the dept.

Hesdin, tn. on the Canche, in the dept. of Pas de Calais, France, was formerly fortified. It has a sixteenth-century tn.

lall. The chief manufs, are brass and leather wares, and cotton. Pop. 2700.

Heseltine, Philip, see Warlock, Peter.

Heseltine, Philip, see Warlock, Peter.

Heshbon (Modern Hesban), chief city of Schon, king of the Amorites, captured by the Israelites on their way to the Jordan (Num. xxi.). Its site is on a plateau in the N.E. corner of the Dead Sea, on a trib. of

the Jordan in Truns-Jordania.

Hesiod, or Hesiodus (f. eighth century B.c.), earliest didactic poet of anct. Greece. B.O.), carliest didactic poet of anct. Greece. He was b. at As ra, a vil. at the foot of Mt. Helicon, and was the son of a shephord. On the death of his father, he and his brother Perses had a law-sult over the patrimony, which the latter won by bribery, whereupon II. left his native place for Naupactus. His brother, who had wasted his substance, now applied to him for help. This incident is recorded in Ris against poem. Works and Days, half for help. This incident is recorded in H.'s earliest poem, Works and Days, half of which contains good advice given to his erring brother, enforcing honest labour the rest of the poom deals with lucky and unlucky days for rural work. The poom The rest of the poem coals with micky and unlucky days for rural work. The poem contains a beautiful description of winter and the earliest fable in Gk, literature of which we have any knowledge, 'The Hawk and the Nightingale.' In this poem, too, H. relates how at some funeral games the state of the sta at Chalcis in Eubora he won in a contest of ong a tripod, which he dedicated to the Muses. The other poem attributed to H. is Theogony. It is a hist, of the creation of the world—the carth, hell, ocean, night, sun and moon, and a hist, and genealogy of the gods, originating in Zeus and Cronus The authenticity of the poem was first doubted by Pausanias (A.D. 200); it is now generally accepted that it is the work of H., or of a disciple, and that it contains intermediations have a little work of the contains and the state of the contains and the contai doubted by Pausanias (A.D. 200): it is now generally accepted that it is the work of H., or of a disciple, and that it contains interpolations by a later hand. The Shield of Heracles, once thought to be H.'s, is probably spurious. It is a description of the expedition of Heracles and Iolaus and Iolaus against Cycnus, and obviously owes much

into his calculations, though his ultimate aim was to estab. the Jewish people as a harding in Palestino. He pub. his famons pamphlet, Der Judenstand, in 1869, in which he set forth this ideal. See life by J. de Hass, 1927.

Herzog, Emile, see Maurois, André.
Herzog, Johann Jakob (1805–82), Ger.
Protestant theologian, b. at Basie. In 1847 he was appointed prof. of theology at Halle, and from there went on to Erlangen Teachers of Greece, 1908, and O. Gigon, Der Ursprung der griechischen Philosophie, 1915.

Hesione, daughter of Laomedon, king of Troy, who exposed her to a sea-monster, according to an ann. custom, to appease the wrath of Apollo and Poseidon. Heracles rescued her from the rock to which she was chained and slew the monster, claiming, as his reward, the horses given to Laomedon by Zeus. Laomedon refused to fulfil his promise and was slain by Heracles, who took Troy and gave H. to Telamon.

Hespeler, vil. of Waterloo co., Ontario, Canada, 12 m. S.E. of Berlin. It is a rved by the Canadian National Railway. It has woollen, flour and saw mills, and manufa, furniture and implements. Pop.

manufa, furniture and implements. 3000.

Hesperia, see HESPFRUS.
Hesperides, in Gk. mythology, the mandens who guarded the golden apples which Earth gave to Hera on her marriage with Zeus. Their numbers and genealogy vary in different accounts, but they are usually supposed to be three in number, and to be the daughters of Hesperus. Acand to be the daughters of Hesperus. According to Hesiod their dwelling-place was for away to the W. on the borders of the ocean, but Apollodorus places their garden near Mt. Atlas. For the account of how Heracles outwitted the H. with their fellow guardian, the drugon Ladon, and gathered the apples, see Heracles see also J. C. Lawson, Modern Greek Folklore and Ancient Greek Religion, 1910.

Hesperornis (Gk. 1000, 1910.

H

Upper Cretaceous strata of Kansas; they were marine diving birds of considerable size, with rudimentar; wings, and a broad tail of moderate length; the sternum is broad and flat and without keel; the head small, with elongated laws furnished with recurved teeth set in grooves. H. regals stands about 3 ft. high, and H. crassipes is an even larger species. species.

Hesperus (Lat. Vesper), Gk. name for Venus as the evening star. Although originally they were regarded as two distinct personalities. H. was very early identified with Phosphorus (Lat. Lucifer), the morning star. The Gk. poets called Italy 'Hesperus,' and later writers extended the name to Spain.

Force where he obtained a commission. His father's business being ruined, he had no occupation after the war and drifted to a mystical anti-benitic association called 'Thule,' whose badge was the swastika and whose radical views were those of Houston Stewart Chamberlain. When the association was suppressed by when the association was suppressed by
the Munich communist revolutionaries,
H. barely occaped with his life. In the
toilowing winter he heard, by mere chance,
a passionate speech by Hitler in denunciation of the Versailles Treaty and became
an ard int convert to National Socialism.
He soon became the close friend and condidn't of littler and accompanied him in fidant of littler and accompanied him in the abortive 'nutsch' in Munich (1923), shaning imprisonment with Hittler in Landsherg am Lech fortress. Being an educated man and of calm and self-con-trolled temperament be exercised great troll d temperament be exercised great influence over the neurotic littler, particularly in the latter's periods of deepest dejection. It was H who inspired the production, though not the content, of Mein Kampf and at Landsberg much of the work was dictated to him by Hitler. In 1928 Hitler made him his private secretary. In 1932 II who had been appointed chairman of the Central Political Bureau of the Nazi Party, was made Deputy Leader and, logically, he is apparent to Hitler. As such, he was consulted on most matters of foreign and sulted on most matters of foreign and domestic policy and probably his advice had some restraining influence on the exhad some restraining influence on the excited nerves of his loader. But it seems that he was never allowed to go on un nortant missions and when important developments took Hitler out of the cap H. was left behind, for it was his loyalty rather than any special ability that Hitler exploited. Rolations between the two men were evidently normal as late as May 4, 1941 when H. sat beside Hitler in the Rolchstag seesion of that date. But on May 13 came the astonishing news that H. had flown in an aeroplane to Scotland, landing near Glassow by parachute and breaking an aniele In a long interview with Lord Simon (then Lord Chancellor) H. put before him six proposals Germany to be given a free hand in kurope, Britain to have a free hand in the Empire, except to the return of the funer Ger colonies, Russia was to be included in Asia, but Germany had certain demands to make of Russia, which would have to be actuated by negotiation or as a result of war. (H claimed that there was no truth war. (It claimed that there was no truth in rumours that Hitler contemplated an early attack on the Soviet Union, which, however, was invaded 5 weigh later) Britain was to evacuate Iraq, the peace agreement was to provide for reciprocal indemnification of Brit, and Ger nationals whose property had been expropriated as whose property had been exproperated as a result of the war, and the peace proposals were to be valid only if negotiated by a Brit Gov. other than the existing one (Mr (harchill's) The information given by H to Lord Simon repeated what he had already told the duke of Hamilton (near whose house be came down) and Sir Ivone Kirkpetrick, of the what he had already told the duke of Hazmilton (near whose house be came down) and Sir Ivone Kirkpatrick, of the Foreign Office. Hence the transcript of Hesse-Darmstadt, state of W Germany;

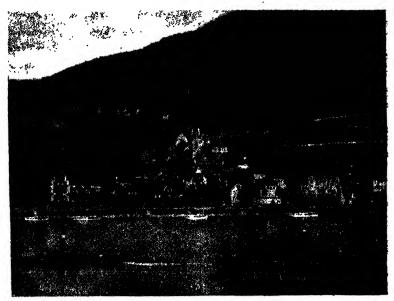
the interview with Lord Simon did not form any part of the case against H before the War Crimes Tribunal, which was based on the records of the earlier interviews. H was found guilty at the Nuremberg trial and sentenced to life imprisonment During the trial he had feigned madness for a long period but afterwards abandoned the pose See J. Rawlings, The Case of Rud light Hees, 1947. Hesse, Hermann (h 1877). Ger novelist, essay ist and poct, b at cals in Wirtenberg His father and grandfather were missionaries in India. Lducated at Manlboom theological school and Cannatadt the interview with Lord Simon did not

big His father and grandfulner were missionaries in India Lducated at Maulbronn theological school and Cannatadt Gennasium, from both of which he ran av ys he became a merhanic and a bookseller and continued his education by much ic wing Lived in Switzerland, at Bisle, Montagnola ne in Lugano, and Berne In 1921 he adopted Swiss nation whits Martied, but left his wife and afty Married, but left his wife and three children in 1911 to make a protracted tout in India During the left World War he was ostracised in Germany as a War he was ostracised in Germany as a pacinst. His carly novels with their vivid portraval of natural seenery and small in life are reminiscent of the Swiss novelist and poet, feotitized keller of whom he might seen to be it e legitimate successor. These novels wer remarkable for their musical processing sympathetic portrayal of childhood which he revered as the only included of human life in which as the only period of human life in which as the only period of finds in the in which m in can abandon himself to his inpotent senes, live a full life and find himself' suddharda is a novel containing many autobiographical himts. It describes a young man a revolt against the orthodox religious views of his lather who is a mission uv and his growing interest in Indian my-ticism, the way to which he finds in excursions into worldly life Der it ppenu Mis a sovere indictment of W twentieth century urb life with its lack of real cul-ture and its handish struggles below the ture and its mandish struggles below the surface. It is a highly controversial work, full of psycho analytic imagery. He believes, like Oswald Spenghr, that the Western World is bound to go under unless it renews itself with fresh ideas from the k. He was awarded the Nobel Prize in 1946. His poetry, as musical as his prose, by turns sombre and idyllic, is also full of investical imagery and is a modern to be of feer comunities of is also full of mystical imagery and is a modern echo of Ger ioniunticism of the great priod Above all he is the proph t of individualism Prin works.—
Novels Peter (Camunend (1908), Gertrud (1910), Rosshalde (1914), knutp (1915), Demian (1919), Siddharfa (1923), Der Sepp nwolf (1927), Murganlandfahrt (1930), Naziss und Goldmund (1930), Das Glasportunspiel (1943), Poetry Gedichte (1922, 1928–37) Trost de Nacht (1929), Mugistr Luth (1949); Perris de Nacht (1929), Poetry Gedichte (1916) Sed H Ball, Hermann Hesse, 1928 R B, Matyis, Der Dichter und die Zeitstemmung (with special reference to Der Steppinion), 1941

115 Hesse

of Starkenburg, Rheinhessen, and Ober-hessen. In the territorial revisions of 1946, consequent upon the liquidation of the state of Prussia, was constituted a Land or state, and now includes the ter. of the formor Land Hesse on the r. b. of the Rhine and the greater part of the former Prussian prov. of Hesse-Nassau. Its ter. on the l.b. of the Rhine because the

proclaimed a republic in 1918, but, later mineral wealth is not great, including a state of the Ger. Reich. Enjoying no some salt, lignite, and iron ores, and a little local autonomy, and including the provs. copper, manganese, clay, etc. The prinmanufs. are leather goods, tobacco and cigars, chem. products, furniture, paper, railway cars, machinery, wagons, cloth, musical instruments, and sparkling wines. There were also many industrial agric, and other special institutes. George I. (1507–96) founded the line which reigned till 1018. Prassian prov. of Hesse-Nassau. Its till 1918. H. became a grand duchy in ter. on the l.b. of the Rhine because the 1806, and part of the Ger. empire in 1871. new state of Rhineland-Palatinate. Ober- The H. Crown jewels were stolen from



HESSE: ASSMANNSHAUSEN ON THE RIGHT MANK OF THE RHINE Behind the town are vinevards, and the slopes of the Rheingau

hossen and E. Starkenburg are mountainous in character, the former having officer of the army of occupation, but most the Vogelsgebirge (chief peak Taufstein, of them were recovered in Chicago. 2530 ft.), and the latter, the Odenwald (chief peak Melibocus, 1700 ft.). W. 2530 ft.), and the latter, the Odenwald (chief peak Melihocus, 1700 ft.). W. Starkenburg is quite lovel, forming part of the Rhine plain. The Rhine is the prin. riv., all the others, save those rising to the N. and E. of the Vogelsgobirge, which flow into the Weger, being tribs. There are no large lakes, but mineral springs are found at Nauheim and elsewhere. Deer, foxes, and wild swine are among the fauna. The prin. industry is agriculture; wine is one of the chief natural produced in

Hesse-Nassau., former prov. of Prussia, situated between the Rs. Rhine and veser is now incorporated in H. The surface is res now incorporated in it. The surface is very mountainous, the chief ranges being Taunus (highest point 2896 ft.), Westerwald, Rhongebirro (highest point 3115 ft.), and the Hessian Mis. All its rivs. are tribs, of the Rhine and Weser. Agriculture and early and the surface and weser. rnere are no large lakes, but mineral trips of the Rhine and Weser. Agricularity are found at Nauheim and else-ture and cattle-rearing are carried on and where. Deer, foxes, and wild swine are among the fauna. The prin. industry is agriculture; wine is one of the chief considerable mineral produces, being produced in the Rheingau, notably at Rudesheim, and the sold at the W. slopes of the Odenwald. The brine springs of Wiesbaden and the sodablearbonate springs of Ems being famous; and excellent wines are produced in the and excellent wines are produced in the Rheingau. The prin manufs are machin-ery, pottery, leather goods, iron ware, chems, and textiles, which are carried on at Kassel, Diez, Eschwege, Frankfort, Fulds, Gross Almerode, Hanau, and Hers-

Fulda, Gross Almerodo, Hanau, and Hersfeld. Other tns. of importance are Wiesbaden, Homburg, and Marburg, which is the seat of a univ. The prov. was formed in 1867-68 out of the ters. of the duchy of Nassau, the landgraviate of Hesse-Homburg, the electorate of Hesse, and the ter. of Frankfort, etc.

The area of H. is 7,931 sq. m. and the pop. 4,064,000. Cap. Wiesbaden.

Hesse-Homburg, former landgraviate of Germany, composed of Homburg-vorder-Hohe on the r. b. and Meisenheim on the 1 b. of the Rhine, with a total area of 106 sq. m. The former dist. is now part of Hesse, and the latter of Rhineland-Palatinate. H. was constituted a landgraviate in 1596 by Francis I., son of George I. of Hesse-Darmstadt. It was incorporated with latter duchy from 1806 incorporated with latter duchy from 1806 to 1815, and again in 1866. Later in the same year it was annexed to Prussia.

Hesse-Kassel, or Electoral Hesse (Ger. Kurhessen), was until 1866 an electorate of Germany, but now forms part of Hesse, having been until 1916 a gov. dist. of the Prussian prov. of Hosse-Nassau. (See article on the latter for particulars as to configuration. products, etc.). When article on the latter for particulars as to configuration, products, etc.). When Philip the Magnanimous died in 1567, he left hair of Hesse, with Kassel as cap, to his eldest son, Wm. IV., 'The Wise.' A large part of Schaumburg and other land was added after the Thirty Years war. In 1803 (under Landgrave Wm. IX.) H. was constituted an electorate, the coveragen hearing the fille of electoral IX.) H. was constituted an electorate, the sovereign bearing the title of electoral prince of Hesse. In 1807, however, nearly all the ters. of H. were transferred to Westphalia, but were recovered in 1813. As the Elector Frederick Wm. had taken part with Austria in the war of 1866, a Prussian army entered his dominions, and they were annexed to Prussia in sept. of the same year.

Hessenes, see ESSEVES. Hesse-Rotenburg, former landgraviate of Germany, which was founded in 1627 by Ernest, the younger son of the landgrave Maurice of Hesse-Kassel. On his death in 1693, his two sons inherited it, but in 1700 they divided the ter. and founded the families of Hosse-Rotenburg and Hesse-Wanfried. The latter died out and the two were rounted in 1755. In 1801 part of the landgraviate was ceded to France, in 1813 some of the remainder to Prussia, and on the death of the Land-grave Victor Amadeus in 1834, what re-mained was re-united to Hesse-Kassel.

For the lineage, exploits, and hist of the houses of Hesse, see Hoffmeister, Historisch-genealogisches Haudbuch über alle Linien des Regentenhauses Hesse, 1874; and Walther, Literarische Handbuch für Geschichte und Landeskunde von Hesse,

1821 and 1858.

Hessian-fly, or Cecidomyria destructor, name of a species of dipterous insects belonging to the family Cecidomylidae;

they are minute fragile flies, having very few wing nervures; the elongated anten-ne are furnished with rings of hairs. This fly does great injury to crops, and in some parts of the world causes considerable loss when it has once attacked cereals; the larve is lodged at a point in the stem of the wheat enfolded by a leaf; the stem consequently weakens and bonds. When the larve the larve of the destruction about to pupate, the larva of *U. destructor* exude- a substance from its skin and this torins a remarkable cocoon, which is called flax-secd.

Hess's Law, in chem., states that the total absorption or evolution of heat in a given chemical reaction is uninfluenced by the number of stages in which the reaction is brought about. The law was first formulated in 1840 by the Russian chemist,

G. II. Hess

Hestia (the fire goddess), daughter of Cronos and Rhea, one of the twelve chief delties in Gk. mythology. She was the goddess of the hearth and home, the personification of family life; and, by extension of the idea of family life to the nation, she was the goddess of the state. In this character her sanctuary was in the prytaneum, where the central fire of every th, and state was kept perpetually burn-ing, and where the magistrates, as fathers of the state, held their meetings. If by any accident this fire was extinguished it might not be rekindled by ordinary are, but only by the sun's rays or by friction, Apollo and Possidon both sought the hand of H., but she took a vow of porpetual cellbacy, and thereafter Zeus made her the presiding delty over all sacrifices. Intouding colonists took some of the sacred fire with them to be kindled on the hearth of their new colony. He sacred hre with them to be kindled on the hearth of their new colony. H. is identified with the Rom. Vesta (q.v.). See T. Allen and E. Sikes (ed.), Homeric Hymns, xxix., 1904, and L. Farnell, Culls of the Greek States, v., 1909.

Heston and Isleworth, urb. dist. in the co.

of Middlesex, England. It is a residential suburb of London, 12 m. S.W. of St. Paul's. Pop. 88,000.

Hesychasis, known also by the sobriquet

of Omphalopsychoi, were a sect of the Gk. Church which arose during the fourteenth century. The sect was a mystic one, its practice being based on the theory that a divine light was hidden in the soul, which was believed to be situated in the stomach. By contemplation at stated times the H. endeavoured to draw out this light. They died out very quickly. See monograph by

F. J. Stein, 1874.

Hesychius, Gk. grammarian of Alexandria of the fifth century A.D. Hiskerion of Gk. words and phrases, with explanations of customs, usages, etc., is of the transfer mules carriedly in wars of of the utmost value, especially in regard to rare words as used by writers like Ægerlylus. In the only MS., now in Venice, which survives, there are large interpolations by later Christian writers. H. hased his work on that of Diogenianus.

See M. Schmidt, 1868.

Hesychius of Miletus, 'Illustrious,' Gk.

chronicler of the fifth century A.D. His
hist, of the reign of Justin I. and of
Justinian is lost; of his universal hist. an

extremely valuable fragment, giving the hist. of Byzantium (Constantinople) down to the reign of Constantine the Great, survives. His biographical dictionary

survives. His biographical dictionary remains in an opitome of Suidas. See J. Oralli, 1820, and J. Flach, 1882.

Heterre, or Hetairai, name usually applied in anct. Greece to the best class of courtesan. The education of Gk. women was almost entirely neglected, but the H. were among the most beautiful, accomplished, and intellectual of Gk. women. They were nearly all trained to play the eithera or the flute, and to dance: play the cithera or the flute, and to dance : Lasthenia studied philosophy under Plato, Leontion was a pupil of Epicurus, while Aspasia, the mistress of Pericles, and perhaps the most famous of all the Gk. courtesans was one of the first advocates of woman's rights to education and cul-ture, and the friend of Socrates. Other famous H. were Phryne, the mistress and model of Phulias, Lais, Pythionice, and Theodote. Most of these lived in Athens; but Corinth was even more famous for the number, beauty, and refinement of its II. See P. van Limburg-Brouwer, Ilis-

11. See P. Van Limburg-Brouwer, 1718: toire de la civilisation morale et religieuse des Grecs, 1833-12; W. Plankl (ed.), Hetdron-Briefe (Gk. and Ger.), 1925.

Heterocyclic Compounds, organic ring compounds with an atom or atoms of other elements as well as carbon in the

other elements as well as carbon in the ring. Example, we hyridine, quinolino, furan, thiophen, and penicillin Heterodyne, method used in wireless telegraphy for the reception of continuous wave-signals, by the production of heats between the incoming waves and the oscillations of the receiving set itself.

the oscillations of the receiving set itself.

Heteropoda, name given to a section of
gastropod molluses, and with the Platypoda constitute the tribe Tænioglossa.

The members of this section are freeswimming and pelagic, their chief characteristics are a large-sized head with two
tentacles, transparont shell and tissues,
and small visceral sac. In most families
the foot in divided into the propositions of and small success see. In most lamiles the foot is divided into the propodium, or anterior part, the mesopodium, on which is a small sucker, and the metapodium, which is elongated and forms the caudal appendago. The II. contain many familiant the state of the second section of the second appendage. The II. contain many families, the most important being Atlantidue Carindariidae, and Pterotracheidae.

Heteroptera, name given to a sub-order of Hemiptera (q.v.); its members differ from those of the Homoptera in that their wings, when in repose, lie flat on the back.
They are divided into Gymnocerata, in
which the antenne are conspicuous and easily moved, and Cryptocorata, in which the antenne are hidden under the head of each eye; the former series are terrestrial, and include the extensive and important family Pentatomidee; the latter are aquatic bugs, containing six families, which are widely distributed.

Heterotropic Substances, see under

ISOTROPY.

Hetman (Russian Ataman), title of the commander-in-chief of the Polish army when the king was not present. It was adopted by Russia as a title for the head of the Cossacks (q.v.), and was later held by the Tarevitch. It was also used for

the elected elder of the Stanitsa in Cossack administration. See Cossack.

Hetton-le-Hole, tn. in the co. of, and 5 m. N.E. of the city of Durham, England. It is the centre of a coal-mining dist. Pop.

19,000.

19,000.

Hettstedt, tn. in Saxony, Germany, 9 m.

N.W. of Elsleben. It has copper mines, and is noted for manufs. of copper and bruss ware, and planes. Pop. 8200.

Heuglin, Theodor von (1824-76), Ger. traveller in Africa, b. at Hirschlanden, in Wurttemberg. Trained as a mining engineer, he became interested in scientific investigation. In 1850 he went to Egypt and learnt Arable and then wart to and learnt Arabic, and then went to Arabia Petraca. Two years later he went to Abyssinia with Dr. Reitz, Austrian consul at Khartoum, and later became his

to Anyssinia with Dr. Reitz, Austrian consul at Khartoum, and later became his successor. During his consulate he again went to Abyssinia and to Kordofan, bringing back a valuable collection of natural hist. specimens. His next expedition was to Somaliland, after which he went to Central Africa. In 1862 he joined the Tinne expedition, and in 1870 went to the polar regions.

Heulandite, named after H. Heuland, an Eng. mineralogist; a monoclinic, translucent mineral, of pearly lustre and white, red, gray or brown colour. Occurs in coilin-shaped crystals in the vesicles of basalt, usually with other zeolites. Fine crystals also occur in the Campsie Ililis, Stirling, the Kilpatrick Hills, Dumbarton, in Iceland, Faeroe Is., Vindhya Hills, and Nova Scotia. Composition: silica (58-59 per cent), alumina (15-17 per cent), lime (6-7 per cent), soda, etc.

Hevelius (Hevel, or Hewelce), Johann (1611-37) Ger natronomer hat langer

Hevelius (Hevel, or Hewelcke), Johann (1611-87), Ger. astronomer, b. at Dauzig. After travelling in France and England he After travelling in France and England he settled as a brewer in his native tn., and took a leading part in municipal affairs. Always interested in astronomy, in 1641 he built an observatory m his house and atted it up with first-class instruments, including a tubeless telescope made by hunself. He was the founder of lunar topography, the results of which he pub. m his Selenographia (1647). He discovered four comets in 1672, 1661, 1672, and 1677. In Sept. 1679 his observatory was burnt down. His works include: Prodromus cometicus (1665), Cometographia (1668), Machina calestis (1st.) was burnt down. His works include: Prodromus concicus (1665), Cometographia (1668), Machina catestis (1st part, 1673; 2nd part, 1679), and Prodromus Astronomic (1690). See H. Westphal, Leben, Studien und Schuften des Astronomen Herelius, 1820.

Heuls, tn. in W. Flanders, Belgium, 2 in. N.W. of Courtrai, on an affluent of the R. Lys. There are manufs. of linen. Pop. 8200.

Pop. 8200.

Pop. 8200.

Heverlee, Belgian tn. in the prov. of Brabant, 15 m. E. of Brussels on the R. Dylo, ongaged in agriculture and mrkt. gardening. It has an old abbey and a beoutiful castle, Pop. 11,600.

Hever Castle, lifteenth-century castle near Edenbridge, Kent, England. Formerly owned by the Boleyn family and once occurred by Anne Boleyn. Now returned

occupied by Anne Boleyn. Now as a residence of Viscount Astor. Now restored

Hewart, Sir John Gordon Hewart, first Viscount and Baron, of Bury, Lance.

(1870-1943), Eng lawyor, b at llurveldest son of Gilos II, of Burvelducated at Bury Grammar School and at Man Chester Grammar School and at Univ. College, Oxford—scholar, 1887 Invited by C. P. Scott of the Manchester Guardan Lducated to join the staft of that jour and for sev vears was a regular reporter in the Press Galler, at Westminster and afterwards prin leader writer on the Morning Leader to the Bar by the Inner Lemple, having obtained a certificate of Honour Had a possible a currence of monoid flad a currence of monoid flat rapid risk was due not only to his mastery of the law but also to the scholarity exactness of his oratory and his imperturbability. The most famous case imperturbability The most famous case of his earlier days was the well known libel action in 1909 of Arlemus Jones v Hulton This case, a leading authority on the law of libel, largely increased his reputation In 1912 he became a K (and in 1913 he was c'ested Liberal M P for Leuester Solicitoi General, 1916 1) attorney general 1921-22—generally considered general 1921-22—gon raily considered one of the best, if not the best, of the law officers of modern times. In 1921 he was admitted to the Cabiret as a personal distinction. As attorney general he was a member of the lish (onference and one of the Brit signatories of the Irish peace treaty Had the way to the Problem been clear be would have been lord chancellor In 1922 on the letterner of lord freethin, he be sue lord that justice and brought to that office much legal learning and scholarship. As a criminal judge he was successful, but it ness prices he was apt to forget that he was not still an advocate 1 ct though an im partial survey of his career must take note of this criticism, he remains a great judge and for intellectual accomplishment, be was probably never surpassed by any previous holder of his office I resident of the War Componsation (curt from 1922 till its labours were ended in 1929. As in od Liberal he was tenacious of the rights of the public against bit unracy and in 1923 he pub a vol. The vot Despotism against the dekgation to dis of the power of logislating by Order in Council, with the Rating and Valuation Act of 1992, as the starting point, thus indict 192) as the starting point of his indict ment Always tenacious of his rights and pealous of the dignity of his office, as was shown during the second is ding in 1931 in the House of Lords of the Supreme Court of Justice (Amendment Bill As Lord Chief Justice he but me a member of the committee estab in 1924 to safe

of the committee estab in 1921 to sais guard future transfers of the controlling shares in the Times
Hewins, William Albert Samuel, (186)—
Hewins, William Albert Samuel, (186)—
He vioyerhampton, second son of Samuel
He ducated at Wolverhampton and Pombroke College, Oxford. He was profor economics at King's College, London, 1893—1903, and a member of the Senomage, 1893—1903, when the Fairff Reform movement of Joseph (1909), and Lore of Processing before the public as one of the chief the Grass (poems), In a Green Shade (1926),

economic supporters of the campaign and as secretary to the Tariff Reform Commission, 1903-17. He was Unionist member for Heroford 1912-15. His economic works include Inglish Irude and kinance of the Seventeenth Century (1892) Imperialism and its Probable Effect on the Commercial Policy of the United Kingdom (1901) Irade in the Balance (1924), Empire Lesford (1927) The Apologia of an Imperialist (1929) The Itojat varies of Iridam (1929)
Hewlett, Maurice Henry (1861-1923)

Hewlett, Maurice Henry (1861-1923) Ing novellst and poet, eldest son of Henry Gav H. (f Shaw Hill, Addington hat I ducated at Isleworth He was called to the Bu an i entered the cham colled to the 13 st and effered the chimic of a prosperous consin He then sin ecded his father in a respectable post in the Land Record dept. of the Woods and Forests, 1890-1900. His first literary with was Lantau rik out of Luscany with with the Hayle of Dead I trending (in ver. (, 1890). His first trouble safets was gained by his first copular success was guned by his inst topulir success was guided by his building, passionate romance, the Korest I sers (1898), full of the colour of early methotal romance. This was so great a success that within three years. It had more a sufficient fortune to be able to quit be Land Revenue dept. In the internin he had pub. Kichard Lea and Nay (Richard Courr de Lion 1900) an historical novel, which also had proved externely popular. He then with to stay at Whittinghame with Arthur Isaliour in or feet to collect material for his next orice to collect material for his next or act to conect material for ms next a mess novel, he que n « Quarr (Mary Que n of scots, 1904) A somantic, but net sentimental, if his great integraty and a sons of purp so and the se qualities led him in later life to y in the Lublan Switty and to Listing come tions with tle Quakers However just his claim to b i poet it is as a novelist that he must be judge I and in his novels he is always se isitive and poetical, compassionate and st diast. There is a living uprightness ii I implicity throughout all hi stylised fury tale buckground which both illumine in reducin the artificiality. The interesting fact about his I arest I need in that it was such a striking success in an age which was essentially mid rialistic and, that's, because of that viry materialism But he never quite reported that success with his other works in this kines, such a 1 tile Nomis in Ital (1891), The New entriumy Inics (1901) and Road in Irany (1909) by the I ool Lirany (1909) and Renny's River (1911), which fellowed his casays in the field of historical noming the essays in the fact of instored in the control he returned to his ineditival ion ance. The Stooping Lady (1907), he Harrow (1910), Half vay House (1912), and other novels, deal with more modern times. It might seem that John Senhouse the character in hest Harrow whom H m delled on himself was the poet and

and Wiltshire Essays (1922). He also wrote a novel, with the incomprehensible title of Bendish, which has certain obvious likenesses to the Byron-Shelley episode, Bendish being Byron and the period that of the first Reform Bill. The present generation neglects H., and his Edwardian best-sellers, but there is still to be found in them something both significant and stimulating. See L. Binyon (ed.), Letters, to which is added a Diary in Greece, 1914, 1926.

Hexachord, term used originally in Gk. music for a diatonic series of six tones, or for the interval of a major sixth. It was also applied to an instrument having six strings. In medieval music, it referred to

a diatonic series of six tones containing four whole steps and one half step.

Hexagon ('ik. ¿, six, and you'o, angle), in mathematics a figure containing six angles and bounded by six sides. If these are equal the figure is shown as a regular H. Hexagonal construction gives a body



the greatest possible amount of strength and stability, and doubtless for this cause is the one adopted by bees for making their cells. Pascal's theorem with reference to the H. is important. It states that if a H. be inscribed in a conic section the points of intersection of the pairs of sides (i.e. 1 and 4, 2 and 5, 3 and 6), produced, lie on a straight line.

Hexabydroxycyclohexane, see INOSITE Hexamoter, form or verse used by the Gks. and Luts. for epic and herore poems. is perhaps the most important of classical metres. The Odyssey and the Iliad alone among Ok. productions would have surfaced to make it famous, while the greatest example of its use in Lat. is in the . Encid. Though both the Gk. and Lat. forms of the H. are based on the same plan, it is necessary to differentiate slightly between them. The normal line in both, however, consists of six dactylic ft., of which the last is catalectic. With a line of this type the Odyssey opens:

occur in every line, in the third and fourth ft. In Gk. a single weak casura (i.e. after the second syllable of the dactyl) is sufficient, but in Lat. it is common to find a strong casura (i.e. after the first syllable of the dactyl) in the third foot, and a weak cesura in the fourth, or vice versa. Thus, cesura in the fourth, or vice versa. for example, in the line from Ovid,

'āddēquod | ingēnu | ās didi | cissē fi | dēlitēr | ārtis,'

the strong cesura occurs in the third foot after ingenues, the weak coesura in the fourth foot after didicisse. Lines with only a weak coesura are very rare except in the earlier poets.

Hexamine, Hexamethylenetetramine (Cile), No. is a white solid obtained by the action of formaldehyde upon ammonia. It is used in medicine, under the name of II., or of urotropine, in certain diseases of

It is used.

It, or of urotropine, in certain the urinary organs.

Hexane, an important constituent of petrol, especially of the solvent called petroleum—ether or ligroin. The formula is C,H,4 and sev. isomeric compounds can exist, but only the normal H. is important. It is a colorriess liquid, sp. gr. 0.6603 at 20°, insoluble in water. It can be made synthetically by heating propyl iodide with sodium. In its chemical, included with sodium.

Hexapla, ed. of the O.T. and version in parallel columns prepared in the second century by the famous Alexandrian scholar, Origen. It consisted of the Heb, a transliteration of the Heb, in Gk, char-acters, an amended Septuagint version and three other versions by the scholars Aquila, Symmachus, and Theodotion. The work has survived only in a few fragments (ed. by D. and F. Field in Origens Hexaplorum quae supersunt) but these are invaluable to critics and students of the OT. It contains, indeed, almost all that remains of the Gk. versions other than the Septnagint.

Hexateuch, name now generally used to denote the first six books of the O.T., which modern criticism shows must be regarded as a literary entity. The name is comed on analogy with Pestateuch, which title was early used by Origin and Tertulian for the books of Geneds, Exodus, Leviticus, Numbers, and Deuteronomy. During the first eighteen centuries of the Christian era, the tradition of the Mosaic authorship of the Peutateuch was almost universally received, but such a tradition was bound to vanish before the first appearance of the light of criticism. In ανδρα μοι | είνεπε | Μολόα πολ | ύπροτω | thurd person; and in Deut. xxxiv. 10, it is sind that 'there are one a prophet since m Israel like unto Moses,' while the account of Moses,' death in which this frequent. Spondess may occur in any or every foot, though a line composed entirely of spondees is rare in Gk., and in Lat. still rarer and more barbarous. Thus it is only in an early poet such as Ennius that such a line could occur as:

| Olli | rēspēn|dit rēx | Ālbāļī lön|gāl | One or two cæsuras (breaks in a foot) | footometric prophet since on the prophet himself. There are similar objections immediately apparent to the book which bears his name. A more detailed examination of the Pestatewch led to the discovery of a great number of repetitions, discrepancies, and contradictions, and these led to the further continuous contradictions. many places Moses is spoken of in the

clusion that no one of these books was the work of a single hand. The most notable of the repetitions is in the accounts of the Creation. The account given in Gon. ii. spiritually, and its pleading for reform. Its style is clearly marked, D was inserted immediately precedes it. The first step into JE, and then the combined narrative Creation. The account given in Gon. il. 4 f. differs irreconcilably from that which immediately precedes it. The first step in its solution was made by a Fr. scientist, in its solution was inade by a Fr. scientist, Jean Astruc, who, being guided by the fact that in the early narrative of the Creation the name used for God is Előhim, while in the second it is Yahweh, divided the book of Genesis into two main divs. or sources. But as criticism moved on to the rest of the Pentateuch, results became far less positive. The clear guidance of the Divine names was no longer to be had, and at first it seemed that the rest of the Pentateuch was a mere disorderly collec-Pentateuch was a mere disorderly collec-tion of fragments with little or nothing in common. This Fragment Hypothesis owes its origin to the Scotsman, Gedder, and was supported by Vater. W. M. De Wette in his Dissertatio Critica (1805) wette in his Dissertatio Critica (1805) irrst propounded the now generally accepted theory that Deuteronomy, instead of being the oldest of the Pentateuchal books, is, in reality, the latest, probably being no earlier than the reign of King Josiah. But, a new and more constructive school of criticism was arising wader the leadership of High Evald and constructive school of criticium was arising under the leadership of Bleek, Ewald, and Hitzig, to whom we owe the Supplement Hypothesis, and to this school, which rapidly superseded the older one, De Wette himself later turned. Here the connection between the Elohist of Genesis and parts of the later books was first clearly seen and this led to the conclusion that to seen, and this led to the conclusion that to the Elohist writer was due the Grund-schrift or foundation which the Yahwist had used as the basis of the final redaction. This view was attacked by Hupfeld in 1853. Hupfeld distinguished two Elo-histic sources which he assumed were quite separate both from each other and the Yahwist source. Noldeke showed in detail how the Elohist source was the Grundschrift of all the Hexateuchal books except Deuteronomy. These views, how-ever, have all given way before the now generally received Graf-Wellhausen Hypogenerally received Graf-Wellhausen Hypothesis, which finds in the H. four main strata. These are known as: (1) P, the Priestly Document, or book of the four covenants (Wellhausen's Q), the work of the so-called older Elohist, which forms the framework; (2) E, the (second) Elohistic document; (3) J, the Yahwist source, and (4) D, the Deuteronomist The chief feature of Graf's hypothesis is the alteration in the position of P. This had hitherto been considered the oldest of the documents, but Graf placed it attor D, and later critics have endorsed his view. It is now realised that the legal and ritual religion which he seeks to codify ritual religion which he seeks to colify streets and a mrkt. sq., and is famous for came after and not before the prophetic the anct. abbey church of St. Andrew, and lyrical Yahwistic conceptions. J is the earliest of the four, but J and E have been wrought so skiffully into a single connected narrative, that it is almost impossible to consider them separately. The tains a fine perpendicular roodscreen of result of their union is known as JE. It is impossible here to show the clear distinction between the E and J portions. D hall and the manor office, two castellated either is or contains the book of the law towers of the fourteenth century, are also

was litted into the framework provided was itteed into the framework provided by P. This last work, the priestly code, differs widely in spirit from the earlier works. It is historical and legislative, dealing with ceremonial regulations and the ordering of the feasts. It formed the framework in which the other three documents were written with the other three documents. framework in which the other three docu-ments were united. Dr. C. A. Simpson in a recent 'critical analysis of the pre-deuteronomic narrative' of the H. ex-amines certain hypotheses advanced by Eduard Moyer, who himself started from positions laid down by Wellhausen. The essential points are: first, the critical analysis should begin not with the book of Genesis but with the accounts of the of Genesis but with the accounts of the canaan; second, that the original tradi-tion of the exodus described a journey from the sea to Kadesh, which became the centre of the Israelites' wilderness life; and that this original tradition had nie; and that this original tradition had nothing to say about a visit to Sinai or about the law-giving there. Meyer believed that by source analysis he could discover the remains of this primitive accountembedded in the H. Dr. Simpson's investigations have satisfied him of the essential correctness of Meyer's view, but he holds that this earliest document was a much simpler narrative than Meyer had a nuch simpler narrative than Moyer had realised and that while Mcyer was right in thinking that it contained no record of an Israelite mass-journey to Sinai, it may well have once 'told of a pligninage made thither by Moses.' We have in the H. what is in effect the sum-total of the available evidence for the hist. of Israel in this period. If, as in this detailed study, we use our hypothetical reconstruction of the hist. to isolate the primitive traditions, and the primitive traditions to establish our reconstructions of the hist., there is a risk of arguing in circles. If, however, the results of this analysis agree with those given by the independent application of linguistic tests, its soundness will be strengthened. See independent application of linguistic tests, its soundness will be strengthened. See books on the various separate books of the H.; also S. R. Driver, Literature of the Old Testument (6th ed.), 1897; C. F. Dillman, Kurzes Exegetishes Handbuch, 6th ed.), 1892; and C. A. Simpson, The Early Traditions of Israel, 1918; and works by authors mentioned in the text. Hexham, mrkt. tn. of Northumberland, England, situated on the S. bank of the Tune, about 21 m. by rail W. of Newcastle. It is an old th. with narrow streets and a mrkt. sq., and is famous for the anct. abbey church of St. Andrew,

dam, where, as a rule, he lived, although he did visit other countries. His pictures are characterised by their warn colouring and their breadth of treatment, combined at the same time with a minute attention to detail. One of his best pictures is a view of Amsterdam to hall.

view of Amstordam th. hall.

Haydrich, Reinhard (1904-12), Ger.
administrator, b. in Halle; served in the Ger. navy, becoming a favourite pupil of Adm. Canaris, head of the naval intelligence dept. From this he passed into Adn. Canaris, head of the navas meaningence dept. From this he passed into the service of the Nazi party, becoming a member in 1931. Under Himmler's (q.v.) protection his career in the Nazi hierarchy was a swift one, and he soon became an Obergruppenfuhrer of the S.S., with the rank of a general of police. A tier. candidate for the chairmanship of the International Police Commission head his position in the period inwediately the International Police Commission be used his position in the period immediately preceding the Second World War for the purpose of at deping the Ger. espionage service abroad. After the Ger. espionage of Bohemia and Moravia he succeeded you Neuruth as Reich protector in Czechoslovakia (March, 1939). He hastened to shew that his reputation for cruelty was well merited. He distinguished himself by clothing his instructions for the bestial torture of all opponents of the regime in pseudo-scientific formulæ and playing the part of the theoretician who rights in pseudo-article to indice and playing the part of the theoretician who had supplied the doctrine for Nazi practice. In the summer of 1941 he was sent to Norway to assist Quisling to win the Norwagians over to collaboration with the Gers., and, by means of a number of executions and the suppression of what remained of freedom of speech and press, he believed he had placed the security of the Ger, regime in Norway on a firm foundation. Back in Prague he resumed his reign of terror. Between Sept. 28—Nov. 29, 1941, 114 Czech citizens were shot, 55 hanged and 60 others executed in various ways. Ultimately he was shot, 55 hanged and 60 others executed in various ways. Ultimately he was assassinated early in 1942, hundreds of Czechs being murdered by the Gerauthorities in retaliation. It was subsequently ascertained that 3 (Zech parachutists killed H. They volunteered for a suicide mission to rid their country of the 'Protector of Bohemia and Moravia', whe had created a mayors consists. who had started a murder campaign against Czech intellectuals. They were members of the Czech Brigade in England members of the Czech Hrigade in England and were flown to Bohonnia in a Brit. plane. They escaped after ambushing H. and hid in the crypt of a small church, but were betrayed by a Church worker whose nerve broke under torture.

Heytin, or Heytin Peter (1600-62), Eng. writer and divine, b. at Burford in Oxfordshire. He graduated at Oxford and

of interest. At a short distance S. of the Influence of Land became In. Hee the battlefield where the Lancastrians suffered defeat in 1464, and near by are the remains of Dilston Castle where the last earl of Perwentwater was beheaded in 1716. Pop. 10,300.

Havoic Acid, see CAPROIC ACID.
Heyden, Jan van der (1637-1712), Dutch artist, b. at Gorkum. His pictures were principally those of the exteriors of buildings, many of them parts of Amsterdam, where, as a rule, he lived, although the influence of Land became than laptain to Charles I., 1629. He was commonwealth, but at the Restoration was made subdeau of Westminster. His brokes a umber more than fifty, chiefly works number more than fifty, chiefly works number dont outcomed to the High Church party, and wrote Ecclesia windicata: or the Church of buildings, many of them parts of Amsterdam, where, as a rule, he lived, although the influence of Land became than laptain to Charles I., 1629. He was coprived of all eccles. offices during the commonwealth, but at the Restoration was made subdeau of Westminster. His brokesial and controverstal. He belonged to the High Church party, and wrote Ecclesia windicata: or the Church of t (1849).

(1849).

Heyn, Piet (1578-1629), Dutch admiral, b. at Delfshaven. He was taken prisoner by the Spaniards, and afterwards gained victories over them in 1624, and in Brazil in 1626. In 1628 he was successful in capturing the Sp. fleet carrying silver valued at a considerable amount. He met his death in a fight against the pirates of lumbirs.

of Dunkirk.

of Dunkirk.

Heyne, Christian Gottlob (1729–1812), Ger. classical scholar, b. at Chemnitz in Upper Saxony. Although very poor, he was a student at Leipzig Univ., and in 1753 obtained a post in the Britil Library, Dreeden. His ed. of Tibullus, which appeared in 1755, secured him the support of Ruhnken of Leyden, and although he suffered many vicissitudes during the Seven Years war, the latter was instrumental in obtaining for him, in 1763, an appointment as prof. at Göttingen. His other works include eds. of the Enchiration of Epictetus; Virgil, 1767; Homer, Pludar, and Apollodorus, as well as many reviews of books. See life by Ludwig Heeren, 1813.

Heyse, Paul (1830–1914), Ger. author; b. in Berlin; son of a prof. of philology, aducated: Berlin; Bonn. In 1854 he was one of the authors invited by Maximilian of Bayaria to take up his abode in

milian of Bavaria to take up his abode in Munich. He excelled particularly as a writer of short stories, all of which are true pictures of life enhanced by humour. true pictures of life enhanced by humour, by judicious power of rendering detail, and by a graceful style. He wrote some novels and a number of peems. Among his works are: Thekla (1858), a poem; he Kinder der Wedt (1873); Das Buch der Preundschaft (1883), a collection of stories; Maria von Magdala (1899), and her Heilige (1902), both of which are dramas. See G. Kemmerich, Heyse als lumanae-heitifell. 1928

trainas. See G. Reinnerich, Heyse as tomanschriftsteller, 1928.

Heysham, th. and port in the co. of Lancashire, England. It is situated about i m. S.W. of Lancaster, and has since 1904 been used by the London Midland Region rallway in connection with steamboat services to the Isle of Man and Ireland. Pan 7,000. Pop. 7000.

Heyst, watering place in the prov. of W. Flanders, Belgium. It thes about 9 m. N.E. of Bruges, with which it is connected by a steam tramway and by rail. The tn. is attractive and possesses a picturesque harbour. During the First World War the sandbanks of H. held an important

chems. It has also brass and iron foundries, and coal mines. Pop. 25,000, Haywood, John (c. 1497-c. 1580), Eng. author, b. probably in London. He seems to have been introduced at court by Sir Thomas More, and to have been a favourite in the time of Henry VIII., Edward VI. and Mary, on account of his ready wit and skill in music. When Elizabeth ascended the throne, however, he retired to Malines. He is chiefly remembered as the writer of interludes, which differed from those of interludes, which differed from those of his predecessors in having real persons substituted for qualities personified, thus forming a link with the modern drama. He also excelled as a writer of epigrams. Among his works are: A Mery Play between the Pardoner and the Frere, the Curate and Neybour Pratie (1533). The Play of the Wether (1533). The Four Ps., (15451). See P. W. Pollard, A Critical Essay, 1903; T. S. Graves, On the Reputation of John Heyrood, 1923; R. W. Bolwell, The Life and Works of John Heyrood, 1922.

Heywood, Thomas (c. 1775—c. 1850)

Heywood, Thomas (c. 1775-c. 1650), Eng. dramatist, was a native of Lincolnshire, and a student at Cambridge. In 1596 he had begun his career as a playwright, and in 1598 was an actor in Henslowe's company. He was a prolific writer, for seventeen years before his death he claims to have written about His dramas deal with ordinary 200 plays. His dramas deal with ordinary domestic life and with adventure, and in domestic life and with adventure, and in addition to these his works comprise pageants, elegies, and poems. Among his writings are "A Woman killed unth Kindness (1603), The Fair Maid of the West (1631), The English Traveller (1633), while among his other writings are: Trotal English (1638), while among his other writings are: Trotal English (1638), while among his other writings are: Trotal Compressions (1600), and the following the states. while among his other writings are: Troid Britanica (1609) and An Apology for Actors (1612). See J. A. Symonds in an Introduction to Thomas Heywood, 1903; P. Aronstein, Thomas Heywood, 1913; A. M. Clark, Thomas Heywood as a Critic, 1922; L. B. Wright, Heywood and the Popularising of History, 1928

Hezekiah (Heb. Hizkujāhā, 'Jehovah hath strengthened'), king of Judah, the son and successor of Ahaz, with whose reign his own provides a most favourable contrast. He was young when he as-

reign his own provides a nost favourable contrast. He was young when he ascended the throno (c. 715 or c. 720 B.C.), and the early part of his reign was doubtless spent under a regency. The king was personally intimate with the great prophet Isaiah, and it may well have been to his influence that Hezekiah's reforming zeal was due. But the reign is memorable for great deeds without, as well as for reform within. The Assyrian overlordship was rejected, and in the second of the two expeditions sent to reinstate it. Israel won a

iron 25, 1854, finished March 28, 1855, and 000, pub. Nov. 1856) has long held its place as the classic of Algonkin legend. The scene of the poem is among the Ojibways on Lake Superior between the Pictured Rocks and the Grand Sable. Perhaps the best account of the legendary H. is that to be found in H. Schoolcraft's Algic Researches (1839), the author having married a half-breed wife. The Iroquois form of the H. tradition is to be found in the same author's History, Condition and Prospects of the Indian Tribes of the United States (1851-57). In these we learn that H. was supposed to have been sent among the N. Amer. Indians to clear their rivs.,

the N. Amer. Indians to clear their rivs., forests and fishing grounds, and to teach them the arts of peace; and that he was variously known as Michabou, Chiabo, Manabozo, Tarenyawagou, and Hiawatha. Hibbert Lectures are a course of lectures first begun in 1878. They were instituted by the tiustees of a Jamaica merchant, Robert Hibbert (1770-1849), who loft money for the founding of scholarships, cartioularly for Unitarius. Until the particularly for Unitarians. Until the year 187' the money was used solely for this purpose, but in that year the trustees decided to begin the lectures for the pur-pose of discussing, and if possible settling.

pose of discussing, and if possible settling, doubtful points of religion, quite apart from any sect. The first series was given by Prof. Max Muller, and since then the lectures have included Renouf, Renan, Kuenen, Beard, Reville, Pficiderer, Sayoe, and Hatch. The Hibbert Journal, financed by the Trust, was founded in 1902. Hibbing, th. in St. Louis co., Minnesota, U.S.A., situated 65 m. N.W. of Duluth. It is in the centre of the great Mesabi iron oro deposits. One of the mines is said to be the largest in the U.S.A., and has produced as much as 4,700,000 tons in one year. The chief industries are iron mining and lumbering. Pop. 16,300.

16,300. Hibernation (Lat. hibernum, winter), term applied to the dormant condition of certain animals during the cold weather. The same process is to be seen in warm lats in the summer, and is then called astivation (q v.), from the Lat. estvum, summer. The cause of the practice of H. is probably the failure of the food supply. Among the hibernating animals are the bat, the bear, the badger the dormouse, the marmot, the hedgehog, many reptiles, and terrestrial molluses. The animals and terrestrial molluses lesiah, and it may well have been to his influence that Hezekiah's reforming zeal was due. But the reign is memorable for great deeds without, as well as for reform within. The Assyrian overlordship was rejected, and in the second of the two expeditions sent to reinstate it, Israel won a conspicuous success.

Hiawatha, legendary chief who ft. about 1450, belonging to a tribe of the N. Amer. Indians. He is said to have formed the League of Six Nations, known as Iroquois, and to have been sent on earth to teach men the arts, argiculture, medicine, and mavigation. He departed to the land of Ponemah (Hereafter) on the appearance of the white man. Longfellow's famous poem The Song of Hiawatha (begun June) take precautions against being exposed to

that hibernating animals can be in a poisonous atmosphere for a long time with no ill effects; (3) the cessation of all activities connected with alimentation and excretion.

Hibernia, also Ierne, Iverna, or Juverna, old classical name for Ircland used by the

Roms.

Hibiscus, genus of malvaceous plants, consisting of 150 tropical and sub-tropical species, most of which are herbaceous in habit. They abound in the hot parts of Asia, America, and Africa, while a few are to be found in Europe, and many are valued for their mucilage and the tenacity of the fibre of their bark. II. esculentus is a species which is cultivated on account of its unripe fruit, the abundance of nucleage which it contains rendering it a useful article of diet. H. Rosa-snensis is well known as an ornamental plant.

Hiscough, or Hiscoup, abnormal form of respiration in which an inspiration is checked by the sudden closure of the glotds. The inspiration is due to a spasmodic contraction of the diaphragm, and this may be caused by an abnormal stimulus of any part of the phrenic norve; it is, therefore, usually an involuntary roflex following irritation of the mucous membrane of the stomach. The characteristic sound is caused by the passage of the inward current of air through the on the closure of the glottis, Temporary attacks may usually be cured by a fraight of cold water, but in certain complaints the accompanying H. may last for days. Bismuth or potassium bromide is generally administered in such cases.

Hichens, Robert Smythe, Eng. novelist and journalist, b. 1864, at Speldhurst, Kent; eldest son of Canon F. H. Hichens. Educated at Clifton College and at the London School of Journalism. Very popular novelist and successful playwright. His first novel, The Green Carnation (1891), His first novol, The Green Carnation (1891), was a satire on the mannersms of Oscar Wildo, then at the height of his fame. He subsequently pub. The Call of the Blood (1906), Bella Donna (1909), The Dweller on the Threshold (1911), The Way of Ambotion (1913), In the Wilderness (1917), Mrs. Marden (1919), Decembe Love (1923), Doctor Artz (1920), The Bracelet (1930), My Desert Friend (1931), The Friest Ludy Brendom (1931), The Paradine Case (1933), The Afterglow (1935), Secret Information (1938), The Million (1910), Incognito (1947), Too Much Love of Living (1948), and an autobiography, Yesterday (1903), and The Garden of Allah (1905). Hickes, George (1642–1715), Eng. divine and philologist, b. at Newsham, near Thirsk, Yorkshiro. He received many preforments et the Deginning of his career.

Thirsk, Yorkshire. He received many preferments at the beginning of his career, but at the Revolution, on refusing to take an oath of allegiance to William of Orange, was deprived of all his benefices. In 1691 he was consecrated suffragan bishop of Thetford by a nonjuring prelate. His fame rests on Thesaurus Grammatico-Oriticus et Archælogicus Linguarum Veterum Septentrionalium

biographical notice in J. Nichols, Literary Anecdotes, 1812.

Hickory, native tree of N. America, belonging to the genus Carya. The word is contracted from the native Virginian pohickery. The husk which covers the shell of the H. nut separates with four valves, while the nut itself has four, or even more, blunt angles. The male flowers are borne in catkins and the leaves flowers are borne in catkins, and the leaves flowers are borne in catkins, and the leaves are pinnate with serrate margins. The tree is fine and graceful with beautiful leaves. The wood is very valuable for fuel purposes. The best known species are: C. alba or shell-bark II., which produces very fine nuts; C. olivæjormis, which produces the popular pecan nuts; C. porcina, which has pig-nuts; and C. amara, with very bitter nuts which are units nutsetable. quite uncatable.

Hickory, th. of Catawba co., N. Carolina, U.S.A., on the S. and the Carolina and N.W. railroads. It manufe, flour, lumber, carriages, and foundry products.

Pop. 13,100.

Hicks, Sir (Edward) Seymour (1871-1919), Eng. actor-manager, b. at St. Heller, persey, son of an army officer. First appearance at Grand Theatre, Islington, 187; in In the Ranks. Chief light comedian at the Galety Theatre from 1894. He married the actress Ellaline Terries (b. 1872) in 1992. H. was author Terriss b. 1872) in 1902. H. was author of numerous plays, including Bluebell in Fairpland (1901), The Catch of the Senson (1901), and The Man in Dress Clothes (1922). He was Knighted in 1935. Pub. Turniy-four Years of an Actor's Life (1910), Between Ourselres (1930), Acting: 1 Book for Amateurs (1931), and The Vintage Years (1943).

Hicks, William (1830-83), Brit. soldier. He entered the army in 1849, and served with distinction through the Indian mutiny. He took part in the Abyssinian

mutiny. He took part in the Abyssinian war (1867-88), and retired with the rank of colonel in 1880. In 1882 he entered the Khedive's army, in which he was known as Hicks Pasha. As chief of the staff he drilled the army into good order, and drove the dervishes out of the country between Sonnea will Ventrue. between Sennar and Khartoum. Although he objected that his troops were unfit to accomplish the task, he was despatched to recapture El Obeid, which had been taken by the Mahdi. At the Battle of Kashgil hy the Mahdi. At the Battle of Kashgil on Nov. 1, between H. and the personally led forces of the Mahd', the majority of his men were slaughtered, and H.'s head was cut off. See J. Colborne, With Hicks Pasha in the Soudan, 1884.
Hicks-Beach, Sir Michael Edward, see ST. ALDWYN, EARL.
Hidago, state of Mexico, bounded on the S. by Flaxcula and Mexico, Querétare on the W., San Luls Potosi on the N., and Vera Cruz and Pueblo, on the E.

on the W., San Luis Potosi on the N., and Vora Cruz and Pueblo, on the E. The N. and N.E. part is mountainous and rugged, being travorsed by spurs of the Sierra Madre range, while in the S. and W. the country is fertile. Mining is carried on to a large extent, the silver and gold mines especially being world famous. Iron is worked at Encarnación and Apulco; other minerais mined are quicksilver. conver. Linguarum minerals mined are quicksilver, copper, (1705). See lead, and zinc. The orange and sugar

cane are cultivated, also the staple cereals. The cap, is Pachuca. Area 8057 sq. m. Pop. 771,800.

Hidalgo (from Mjo de algo, son of somebody, or possibly *Halicus*), title of the lower nobility. They had the right to use the title don, but when constitutional gov. was instituted their privileges were taken

Hidago del Parral, city of Chihuahua, Mexico, situated about 120 m. S.E. of the tn. of Chihuahua. In the vicinty are gold and silver mines. Pop. 16,000.

Hides, see LEATHER.

Hiempsal, name of two princes of Numidia: (1) Son of Micipsa, was nur-dered by Jugurtha, who had been given by Micipsa a share in the rule of the kingdom. (2) Probably grandson of Masmissa, and ruler of Numidia after the Jugurthine He was afterwards driven from his kingdom by the followers of Manus, but in 81 B.c. the kingdom was restored to him by Pompey.

Hierapolis: (1) 'The Holy City,' so called by reason of its hot springs and cave, Plutonium, mentioned by Strabo, on account of which it was held sacred. Paul founded a Christian church here and it was the bp. of the philosopher, Epictetus. It was also a seat of worship of the tetus. It was also a seat of worship of the goddess Cybele, and a centre of Phrygian nationality. See Sir W. Ramsay, Cities and Bishopries of Phrygia, 1895. (2) An anct. city of Syria (Gk. Bambye, Arabic Mumby) on the high road from Antioch to Iraq. At one time an important centre of the cotton and silk trade, its decay dates from the Mongol invasion. Romani d Diogenes captured it in 1688, and it was stormed by Saladin in 1175. It was a sent of worship of Astarte, whose temple was ravaged by Crassus in 53 B.C.

Herarchy (Lat. hierarchia, ik. icoodia from icos, sacred, and odds, leader), coverning body of the Church, consisting of the bishops and lower orders of clergy.

Hieratic, see HIEROGLYPHIC AND HIER-ATIC WRITING.

Hieres, see HYERES. Hierocles, name of sev. Gks., the chief of whom are: (1) (ft. c. A.D. 430). A Neoplatonist writer of Alexandria. He studied under the Neoplatonist Plutarch at Athers, and for sev. years taught at Alexandria. He later removed to Contantinople, where his religious views caused such offence that he was cast into prison. To him is attributed a commentary on Pythagoras's Carmina Aurea (ed. F. W. Mullach, Fragmenta philosophorum (1860), and Φιλογιλως, a collection of over 250 jests (αστια) (ed. E. Eberhard, 1869). (2) Stole, the (ed. E. Eberhard, 1869). (2) Stole, the author of Elements of Ethers ('110ury oroixeiwors), which is sometimes attributed to the above. See Prachter, Hurokles der Stocker, 1901. (3) (fl. c. A.D. 300). Proconsul of Bithynia and Alexandria, supposed to be the instigator of the per-secutions of the Christians (303), and the

author of Loya chahydic spor row xportarous.

Hieroglyphie, Hieratic, and Domotio
Writings. Hieroglyphic writing (Gk. hierogluphid grammata, from, hieros, holy,
sacred, gluphe, 'carving,' grammata,

'letters'), was the term applied by the Gks., as mentioned by ('lement of Alexandria (c. A.D. 200) in Strom. v., 4, to the pictorial symbols carved on Egyptian obelisks, sarcophagi, temples, and other obelisks, sarcopaegi, temples, and other monuments, or drawn on paintings, and which constituted one of the most important systems of writing of the anct, world. The term is also applied, although improperly, to other symbolical systems of writing, like those used on Hittie (q.v.), Mayan (q.v.) and Aztec (q.v.) monuments. The secondary meaning of the ments. The secondary meaning of the term 'hieroglyphic' for any 'unintellig-ible 'characters or, in general, as denoting something mysterious or emblematic, is easily accounted for by the fact that the Egyptian increglyphics for centuries dened all attempts on the part of antiquarians and scholars to decipher them.

The origin and the early hist, of hiero-glyphic writing are still uncertain. It is almost universally accepted that they were parallel in many respects with those of other so-celled 'ideographic' systems of other so-celled 'ideographic systems of writing (see WRITING). According to this common theory, the Egyptian hieroglyphics started with crude pictures with crude pictures objects such as 'flower's delineating objects such as 'flower,' 'sun,' 'horn,' 'eye.' Later, this method of communication becomes too slow and cumbersome, and more or less figurative objects are chosen to express compendonjects are chosen to express compendiously a whole train of ideas by their essential relation-hip with that whole of which they form a salient part. e.g. flying arrows to indicate a 'battle.' Thus, putography (q.v.) becomes ideography (q.v.); the representative signs are a more or less exact pictorial image of the object including the metaphorical or analogical expression of the idea intended, e.g. the sun is represented by a circle, the moon by the crescent. The transition from figurative imagery to symbols representing also abstract ideas, is a comparatively casson, and it becomes clear that there may be no limit to eclectic ingenuity. For example, an eye with a sceptre beneath it denotes the king or kingly power; a hawk's head surmounted by a disc, the sun. Next come combinations of figurative imagery and symbols representing abstract ideas. Characters used in this way are generally called, although not quite correctly, 'ideographs' (q.v.); quite correctly, 'ideographs' (q.v.); they are, to be more exact, word-signs. As soon, however, as the need of continuous discourse arises, it becomes evident that a number of the vital elements of speech, such as prepositions, inflexions, pronouns, or personal names, could not be represented by this means. Hence, the picture-symbols come also to be used to represent the phonetic values of words without any regard to their meaning as without any regard to their meaning as pictures, and the system becomes a kind of 'rebus-writing.' The range of expression of hieroglyphic was, therefore very wide. This was already recognised by the famous decipherer of the Egyptian hieroglyphics, Jour François Champollion (1790–1832), who concluded 'that there was no Egyptian writing altogether pic-torial or representative, that the anct. Egyptians did not employ a mode of

In order to remove ambiguities, there are introduced determinatives, that is signs, which defined the meaning of a sword by denoting the class to which it or multi consonantial phonograms, which belongs 'mountains,' 'islands, 'women,' is they combined with the determinatives

THE MENT OF THE PROPERTY OF TH 面下中门门 1862年中间 - Place William Miles and I I - Link Trong Miles ははないことにあれたいないないないになったない المعالم المراد والمراس التعالم المالية

A PAGE OF THE GITAL HARRIS PAPERUS

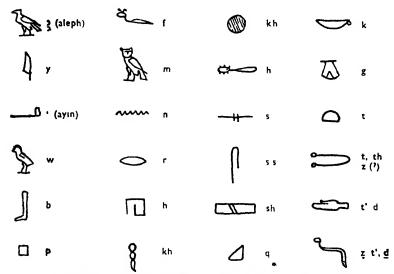
'to see,' 'gods,' 'negation,' and so forth These determinatives were ideographs or plicated script, and maintain d it for over plicated script, and maintain d it for over three and a half thousand vents, i.e. from word, but were not pronounced, because, '3000 B.c. to about the sixth century word, but we're not pronounced, because, as mentioned, they only fulfilled the function of determining the meaning of the word they followed. For instance, the symbol representing 'a man with a long beard' wis the determinative for 'gods,' august persons,'and 'kings'; 'a man with raised hands' determined 'adoration,' invocation 'and 'prayer', 'the prone figure of a man' determined the ideas of 'death,' massacie,' ememies,' and so forth. Thus, in general the employment of hicroglyphic characters was threefold, (1) word-signs, acters was threefold, (1) word-signs, however, from left to left sometimes, (2) phonograms and phonetic complements; (3) determinatives. As to the phonograms, it must be pointed out, that they usually consisted of the bare root of the words, but, as the Egyptian within the constant of the sometimes are the beginning of the lines that the words, but, as the Egyptian within the sometimes are the beginning of the lines the sometimes. the words, but, as the Egyptian writing (like the Semitic alphabets) was purely

a D, to which the latest nicroglyphic in-cuptions belong like the Mayan or Aztec cripts, but unlike the Chinese or cunciwere highly pictographic, and minitained their pictorial character right to the end of the employment of this script. Besides, while the symbols of Aztec script, for instance, were crude pictures, Egyptian bicroglyphs on the whole were artistic drawings. The direction of writing was

The signs muc the beginning of the lines. Some inscriptions are written vertically. Heratur (from Uk hierartikos, 'sacred, priestly') or 'priestly' withing, was a simple modification of the hierarglyphic priestly in the pr consonantal, and there was practically no simple modification of the hieroglyphic need for three-consonantal phonograms, system, differing from it only in the exgenerally speaking the phonograms were ternal form of the signs. At the time of

and making copies on papyrus or Egyptian religious texts and literary compositions; and the term 'hieratic' was particularly suitable as opposed to the demotic writing (see below), which then was the script of everyday life. In earlier times hieratic writing was the only Egyptian cursive script employed both for sacred and professe autoroges while the hieroslyphia and making copies on payvrus or Egyptian pictures, that has survived (although only religious texts and literary compositions; in a schematic form) in the hieratic and the term 'hieratic' was particularly suitable as opposed to the demotic writing disappeared. Besides, whole esception, which then was the script of were fused by ligatures into single demotic everyday life. In earlier times hieratic signs. On the other hand, as a system of writing was the only Egyptian cursive script employed both for sacred and profame purposes, while the hieroglyphic it was neither syllabic nor alphabetic, but

Clement of Alexandria, from whom the scribes as a cursive simplification of hierarchic is taken, this script was atic writing. Practically all the chief mainly employed by priests for writing characteristics of the hieroglyphics, or and making copies on papyrus of Egyptian pictures, that had survived (although only



From 'The Alphabet, a Key to the History of Mankind' by Dr David Diringer Hutchinson & Co (Pushishers) Ltd.

EARLIEST HIEROGLYPHIC CONSONANTAL SIGNS

in one way or another from about 3000

writing was the Egyptian monumental consisted essentially of word signs, phonoscript. The hieraric script was employed grams and determinatives (see above). It in one way or another from about 3000 s.c. to the third century A.d. The direction of writing, originally vertical, later became horizontal from right to left. A fine example of hieratic writing is to be seen in the Brit. Museum in the Great Harris Papyrus A page of this papyrus is reproduced in the illustration on p 125.

Demotic writing (from Gk démotika of grammala, as mentioned in Herodotus, II, 36, or démoid, in Diodorus, from démos, 'people'), that is 'the people's' writing, or 'popular, vulgar 'characters, was also called 'enchorlal '(on the Rosetta Stone, see below), from Gk. enchôra, enchôrus, of the country,' or 'native' writing, or 'epistolary characters' (grammala epistolographika, in Clement of Alexandria, strone, v., 4). It was a conventional system of signs constructed by the was written horizontally, from right to lett Demotio writing was employed from about the seventh century B.c. to

teenth to cighteenth centuries were unsuccessful, although Warburton conjectured the existence of the 'alphabetic' characters, De Guignes conjectured that some of the signs were determinatives, and the Dan. scholar G. Zoega 'guessed' that sev. of the incroglyphics must represent sounds, and actually used the term phonetic in this context in his work on obelisks pub. at Rome in 1797; he also recognised that the oval rings, known as cartouches contained royal names. At the beginning of the nineteenth century, real progress was made by Swedish and Eng. scholars in decipherment of demotic and later of hieroglyphic writing. Dr. Thomas Young, of Eurmanuel College, Cambridge, pub. various discoveries in the Supplement to the Encyc. Brit., 1819. His was the first real attempt to determine the syllabic or appliabetic values represented by heroglyphic signs, and his work soluted by more agirs, and his was a streamely important, because it gave one of the clues to Champollion's (see below) celebrated system of phonetic values as opposed to then generally accepted theory that hieroglyphic and hieratic characters were not phonetic. He set himself the problem of determining what groups of demotic characters corresponded to certain Ck. words, and his identification in the hieroglyphic script of sev. names of gods and persons also provided a basis of Champollion's decipherment. However, the Fr. scholar Jean François Champollion may be considered as a real 'father' of modern decipherment; its key was provided by the colebrated Rosetta Stone (now in the Brit. Museum, B.M. 960, No. 24). It was discovered in 1799 by the Fr. captain M. Boussard, among the rulns of Fort St. Julien. near the Rosetta branch of the Nile, during Napoleon's attempted conquest of Egypt. It was secured for England by Lord Hutchinson under the 16th article of the capitulation of Alexandria. The discovery of this monument of black basalt excited the liveliest interest among archeologists, orientalists and especially Egyptologists. The stone contains an inscription in three scripts : hieroglyphic (upper part 14 lines), demotic hleroglyphic (upper part 14 lines), demotic (middle part, 32 lines) and Gk. (lower part, 54 lines). The Rosetta Stone is a priestly decroe drawn up in 197-196 B.c. in honour of Ptolemy V. (205-181 B.c.). The fact that a large part of the hiero-glyphic version is broken off, the beginning of the first fifteen lines of the demotic version wanting, and the end of the Gk. mutilated, rendered the key a very diffi-cult one to apply. Starting from the

three above and three below; 7 by four above and three below; 8 by four above and four below; 8 by four above and four below; 9 by three lines of three strokes each. 10 was represented by a sign having the form of a roversed U (A); 100 by a kind of spiral; 1000 by a sign representing the lotus flower; 10,000 by a kind of long, vertical, crooked stroke; 100,000 by a frog; 1,000,000 by a man with upraised arms; all the other numbers were represented by repeating the above signs.

The attempted decipherments of the Egyptian scripts by the sarants of the six teenth to eighteenth centuries were intending his views, he applied his 'al-phabet' to the reading of groups of hieroglyphics which represent common names, verbs, and other parts of speech, and to the establishing of his theory that the characters or groups of characters which

characters or groups of characters which in the bloroglyphic texts express genders, numbers, persons, tenses, etc., are only the phonetic signs of single letters.

Champollion's masterly discretation on bicroglyphic writing pub. in 1822, bis Lettre à M. Dacier concerning l'alphabet des hiéroglyphes phonétiques employés par les Fapupienss, must be considered of paramount value for the hist, of deciphermens, although for more accurate information although for more accurate information on the subject reference should be made to more elaborate modern treatises. Much to more elaborate modern treatises. Much scientific scepticism persisted until the results of Champollion's successful decipherment were confirmed by another important inscription known as the Decree of Canopus, found in 1866 by the ominent Ger. Egyptologist R. Lepsius. The subsequent work of Eng., Ger., Fr., Amer. and other scholars resulted in the fact that at the present day much that is fact that at the present day much that is tolerably certain can be postulated of the language and the scripts of anct. Egypt, and an entire civilisation extending over

three and a half millennia has been revealed.

The bibliography of the subject is en-The bibliography of the subject is encornous. Following are a few major studies, of recent date, all of them containing rich bibliographies: The Brit. Museum Guide to Egyptian Collections, London, 1909: E. A Wallis Budge, Facsimiles of Egyptian Hieratic Papyri in the British Museum, London, 1910, 1923: Hieroglyphic Texts, etc., in the British Museum, London, 1911-14; J. H. Breanted. Ancient Records of Egypt. Heroglyphic Tests, etc., in the British Museum, London, 1911-14; J. H. Brensted, Ancient Records of Egypt, Chicago, 1909, G. Moeller, Hieratische Paldographie, Leipzig, 1909-36; A. Erman, Die Hieroglyphen, Berlin and Leipzig, 1912; W. Spiegelberg, Demotische Grammatik, Heidelberg, 1925; E. Naville, L'écriture égyptianne, Paris, 1926; A. H. Gardiner, Egyptiann Grammar, Oxford, 1927; T. E. Peot, Ancient Egypt (in E. Ryre, European Civilisation, etc.), 1934; K. Sethe, Das hieroglyphische Schriftsystem, Glitickstalt and Hamburg, 1935; E. A. Wallis Rudge, The Rosetta Stone, 1935; J. A. Wilson, The State of Egyptian Studies ('The Haverford Symposium'), New Haven, 1938; W. F. Filinders Petrie, The Making of Egypt, Oxford, 1942; G. Steindorff and K. C. Seele, When Egypt Ruled the East, Chicago, D. Diringer, The Alphabet, etc., London, 1948, pp. 58-71.

Hieron, or Hiero I. (d. 466 B.c.), tyrant of Syracuse, the successor of his brother Gelon. He defeated the Etruscan fleet near Cume. On three occasions he won the crown at the Olympic games, and was a patron of Pindar, Abshylus. Simonides, and Epicharmus whom he installed at his court.

Hieron, or Hiero II. (c. 308-216 B.C.), tyrant of Syracuse, a descendant of Gelon. After his victory over the Mamertines (270 B.c.) he was unanimously elected king by all the states of Sicily. In the first Punc war he sided with the Carthaginians, but in 263 became a friend and ally of Rome, to whom he remained faithful

till his death.

Hieronymites ('Brethren of Goodwill,' Gregorians'), hermit order of Hieronymus (or St. Jeromo), an offspring of the Franciscans, founded by Thomas of Siona (fourteenth century). The community settled in Spain and later estab, branches

in Portugal, Italy, the Tyrol, and Bavaria.
Hierro, or Ferro, one of the Canary Is.,
occupying the most S.W. position of the
group. In the attempt to flud a meridian circle which should intersect only seas which divide new world from old the Meridian of Ferro was fixed upon. But the Fr. found that the is. was 20° 30′ W. the Fr. found that the 1s, was 20° 30° W. of Paris, so reckoned the geographical zero as 20° W. Hence the 'Meridian of Ferro' is really about 30° E. of the 1s. The chief th. of the 1s, is Valverde. Area about 106 sq. m. Pop. about 6000.

Higden, Ranulf (d. c. 1361), Eng. chronicler, was a monk of St. Werburgh's monustery Chester and whose creat work

monastery, Chester, and whose great work was a general hist, entitled Polychronicon. This work dealt with events down to his own time, and was printed by Caxton in 1482. It is now ed., with trans. for the Rolls Series (1865-86).

Higgins, Edward, see under SALVATION

Higginson, Thomas Wentworth (1823-1911), Amer. man of letter, b. at Cambridge, Massechusetts. Graduating from Harvard (1841), he subsequently studied theology, and became paster of a Unitarian church. He was an enthusiastic tarian church. He was an enthusiastic supporter of the anti-lavery agriation. During the Civil war he was captain of the 1st S. Carolina Volunteers, a fixed negro regiment. He wrote Army Lafe in a Black Regiment (1870), lives of Margaret Fuller Ossoli (1884), Longiclow (1902), and Whitter (1902), and Part of a Man's Life (1905). See his Collected Works (1905), 1900 (7 vols.), 1900.

Higham Ferrers, tn. in the co. of Northampton, England, situated about to m. N.E. of Northampton. It is engaged in the manuf. of boots and shoes. Pop.

3400.

Highbridge, tn. of W. Somerset, England. It is situated about 25 m. to the S.W. of Bristol, and has locomotive works.

Pop. 3000.
High Church, that section of the Anglican Church which attaches supreme importance to the administration of word

whose ministrations it considers necessary as the divinely appointed instruments of grace.

High Commission, Court of, judicial court estab. by Queen Ehrabeth in 1559. It was composed of clerical and bay commissioners nominated by the crown, and its function was to investigate eccles.
cases. It attempted to extend its influence over cases which should have been dealt with in the common law courts, with the result that in the reign of James I. Coke tried to check its power by his ruling Coke tried to check its power by his ruling that it could only fine and superison in cases of heresy and schism. In 1641 the court, with its lay counterpart, the Star Chamber, was abolished by the Long Parhament. It was revived by James II. in 1686, but finally abolished by the Bill of Rights (1689). A similar court existed in Scotland for thirty years (1608-33). High Commissioner, term of varying

in Scotland for thirty years (1608-38).

High Commissioner, term of varying import, generally used to mean a high administrative officer in a dependency or protectorate, or a Dominion's Chief representative in London. Thus there was a Brit. High Commissioner for Iraq before that country became independent. In recent years H. Cs. representing the United Kingdom Gov. have been appointed in the dominions of Canada, Australia. in the dominions of Canada, Australia, New Zealand and S. Africa. They act as confidential channels of communication between the United Kingdom and Dominion Ministers.

High Court of Justice, see Appeal; Chincery; Common Liw; Judicature Acra; and Supreme Court of Judica-

11 RJ..

Higheste, suburb of N. London, in the co. of Middlesex, about 11 m. N.W. of St. Paul's. It is noteworthy as having been rains. It is notiverthy as naving been the place where Bacon and Coleridge d., and also for its cemetery containing the remains of Lyndhurst, Faraday, and George Eliot, among other celebrities. Whitington's stone is at the foot of H. Hill, and is said to indicate the place at

Hill, and is said to indicate the place at which he turned again after hearing Bow Bells. Pop. 22,000.

Highland Cattle, see under Cattle.

Highland Dress, bost illustration which the Brit. Isles offer of a costume truly national. The 'garb of old Gaul' consisted of the 'Feilebreacan' or 'belted plaul.' A piece of tartan cloth, 4 yds. long and 2 yds. broad, was drawn in at the waist by a belt, which secured the careful folds of the lower part or skirt. The plaid, that is the unper portion, was The plaid, that is the upper portion, was usually fastened with a handsome brooch or buckle over the left shoulder, so that the right arm was quite free for use. This simple at thre was admirably adapted to the wild, free life of a Highlander. For, if he were overtaken by night or storm he might wrap his warm plaid round both his shoulders, whilst his loose nether garment was no hindrance, whether ho wished to sente heights or wade across streams. The turtas (from Fr. tiretaine, a linsey-woolsey cloth) was a device with High Church, that section of the Anglican Church which attaches supreme instruction of the administration of word coloured background for signifying the and sacrament by clerky duly ordained, wearer's clau or dist. Members of the

same sept or clan wore tartans whose main characteristics were the same, and whose variations had a local meaning. whose variations had a local meaning. Broadly-speaking, tartans are red and green: the tartan of the Macleods, Graomes, and Forbes was green, whilst the Camerons, Stewarts, and Macgregors all wore red. In time the 'Felicbeog' or 'filibeg' superseded the 'Felicbreacan.' The lower part of the latter became the 'kilt,' which was carofully sewn and tucked, whilst the body part was separate and the shoulder-plaid became merely an ornament. The kilt came merely an ornament. The kilt stopped short of the knees, and over it in front was hung the 'sporran' or 'spleuchan,' that is a goat's skin purse. The Highland 'bonnet' was a cloth cap adorned with heather, or in the case of a chief with eagle's plumes. Through his belt a Highlander would thrust his dirk, knife, pistols, and fork, whilst on horseback he were his 'truis,' or 'trews,' that is close-fitting tartan breeches and stockings made in one piece. The gentry were distinguished by silver ornaments and lace embroideries, but these are seen now only embroideries, but these are seen now only in ceremonial dress at balls, gatherings of the clan associations, and the like. The kilt is worn little for everyday dress now, but has a certain popularity for walking and climbing. It is worn by the bandsmen of Highland regiments and the Scots Guards, but is optional wear (with trews

Guards, but is optional wear (with trews or trousers) or on er and men.

Highland Light Infantry (City of Glasgow Regiment). Formerly the 71st and 71th regiments, which were linked in 1881. The 71st was raised in 1777 as the 73rd, but was renumbered 71st in 1786. Lord MacLeod's Highlanders, originally the 73rd regiment of foot but later the 71st, who ultimately became the first battalion of the Glasgow Light Infantry, had, despite their early influe of Glasgow recruits, no nominal connection with Glasgow. That began after the embodiment of a second battalien raised at Dumbarton in 1804, who were disbanded in 1815, six months after Waterloo. For a few months after 1808, at the instance of Lt. Gen. Sir John Craddock, the 71st were Gen. Sir John Craddock, the 71st were granted the title of the Royal Glasgow 71st Regiment; but in the Peninsula was they became the Highland Light Intantry, though the bonds with Glasgow were not ranted the title of the Royal Glasgow 71st Regiment; but in the Peninsula war they became the Highland Light Infantry, though the bonds with Glasgow were not weakened, the regimental records showing that of the 1671 Scottish recruits be tween 1806–1818 the greater number were listed as belonging to Lamarkshire and Ren-rewshire. Later, in 1923, royal approval was given for the adoption of the title City of Glasgow Regiment. This regiment served with distinction in India in the Carnatic and Mysore. It then saw service at the cape of Good Hope and in the Peninsular war, especially in the Tath was raised in 1787 for service in India. Like the 71st, itserved with much distinction in that country, particularly at Assaye under Str Arthur Wellesley. It served again under him through the Peninsular were the E.E. 7

Peninsular war. From 1818 to 1845 it was in Cauada and the W. Indies, then went to the Cape, and lost many men in the wreck of the Birkenhead. After the Kaffir war it went again to India. The H.L.I. saw service in the 1882 Egyptian Expedition, and fought at Tel-el-Kebir. Back to India in 1881, it served later on the N.W. Frontier during the 187-98 campaign. It fought at the Modder R. during the S. African war (1899-1902). During the First World War it raised twenty-six battalions, which served in France, Flanders, Gallipoli, Egypt, Falestine, Mesopotamia, and Archangel. In the Second World War the H.L.I. took part in the battles on the Western Front both in 1940 and 1944-45. both in 1940 and 1944–45.

Highland Park, industrial suburb of Highland Fark, Industrial suburt of Detroit, Michigan, U.S.A. with automobile manufs. Its pop. increased from 100 in 1940.
Highland Pony, see under Horse.
Highland Terrier, see Scottish Terriers, Highland to the beddering the distinguished in

riigniand Terrier, see SCOTTISH TERRIER.
Highlands are to be distinguished in
formation alike from tablelands and ints.
Cenerally speaking, H. may be said to
exist in the E. of the Old World, in the E.
of Australia, and in the E. of N. America.
They occur in broad expension measure of Australia, and in the E. of N. America. They occur in broad, expansive masses, unlike high ints. which are much more localised. Their structure, moreover, is peculiar. Both valleys and watersheds or divides radiate, and the riv. systems are like great branching trees; the distribution, as in mountainous countries, of parallel ranges separating valleys is enly rarely visible—the Appalachians are an exception; as a rule the valleys branch like fingers in the inner H., thus collecting true, streams, whilst they broaden and trib. streams, whilst they breaden and deepen as they pass outward. H. are formed by the denudation or washing out valleys, as, for example, the H. of Scotland, and by slow crustal movements,

Scotland, and by slow crustal movements, and sometimes by volcanic activities.

'The H.' means specifically that part of Scotland which stretches N.W. of a line drawn between Helensburgh and Stonehaven and the term is used in contradistinction to the Lowlands, of Scotland.

plains and valleys, they were more favourable places for prayer. The prac-tice of worship on these spots became frequent among the Jews, and was with difficulty abolished in spite of the warnings

of the Biblical prophets.

High Point, tn. in Guilford co., N. Carolina, U.S.A., is 34 m. N.E. of Salisbury. It has a thriving trade, and manufs. bricks, cotton, machinery, and tobacco. It has also furniture factories, silk and cotton mills, carries on a large agric. trade and is a wholesale centre. It

agric. trade and is a wholesale centre. Its served by three railways. Pop. 39,400.

High Priest, head of the Jewish priesthood. In the early days of the Jewish roligion there is no trace of this office, which does not appear until the campaign against the local sanctuaries had concentrated worship at Jerusalem. The true promin nee of the H. P. dates from the Exile, after the return from which he becomes the head of a theorratic state. The
regulations for the H. P. are given (see
HEXATEUGH) in Leviticus with great
detail, where his ancestry is traced from
Aaron and his son Eleazar. The vestments of the H. P. were extremely magnificent, and were worn in the exercise of his duties except on the Day of Atonement, when he alone, clad in white linen, entered the Holy of Holies to sprinkle the blood of sacrifice.

High River, tn. of Alberta, Canada, on the Highwood R., 40 m. S. of Calgary, on a branch of the C.P.R. Dairy farming

a branch of the C.P.R. Dairy farming and ranching are the chief occupations. About 20 m. distant are the Turner Valley cliffelds. Pop. 1800.
High School, term used in the U.S.A. for those schools which superseded about for toose schools which superseded about 1850 what were called academies, the difference being that high schools were maintained (as a general rule) at public, not private, expense. In some states their maintenance is part of the state constitution. A H. S. may be regarded as one supported by public funds, usually free, open to both sexes, and where pupils are prepared for technical schools and univs. There are, however, public and private H. Ss.; the term has much the same meaning in Canada, but in England has no definite significance. The Canadian public H. S. is that type of secondary school which in most of the prov. has since 1870 (the period of the origin of the free schools), come to be looked upon as the orthodox institution. Though a separate institution, it is an integral part of the educational chain from the kindergarten to the univ. It made its appear free, open to both sexes, and where pupils garten to the univ. It made its appearance in Ontario in 1871 as a democratic publicly-controlled, co-educational estab., offering a classical curriculum in preparation for a univ. or, alternatively, an Eng. curriculum for pupils intended for some immediate vocation. The Prince of Prince of immediate vocation. The Prince of Wales College, founded in Prince Edward Is. in 1860, the only secondary estab. in that Prov., has some of the features of the public H. S. County academies, the precursors of the H. S. in Nova Scotia were made free in 1864. The grammar schools, the H. Ss. of New Brunswick, were prought, under the control of the were brought under the control of the pard (1702-24).

local authority in 1884; in 1870, in Quebeo, the Protestant Board of Montreal assumed control of the existing H. S. for boys and estab. one for girls in 1875; in the eightles collegiate depts., which later became separate institutions, began to be estab. in Manitoba; in Saskatchewan H. Ss. replaced union schools (i.e. schools H. Ss. replaced estab. In manicona; in suspending wan H. St. replaced union schools (i.e. schools arising out of the movement in 1850 in Ontario, where grammar school boards and common school boards were permitted to unite and form schools for giving demonstration and demonstration to addition to cratic secondary education in addition to elementary education) in 1907; and in Brit. Columbia a free H. S. was estab. in Victoria in 1876.

High Seas, term of international law, denoting the whole extent of sea which is not under the sovereignty of any state. Every country adjacent to the sea owns 'territorial waters' restricted to the area within three m. of its shores. The H. S. are free to all nations, subject to certain laws made for the common welfare.

High Sheriff, co. or city officer vested with wide judicial and executive authority Their duties are defined by the Sheriffs Act, 1887, and include attendance on judges during Assizes, the functions of returning officers during parl. elections, and the preparation of lists of jurors. City sheriffs are appointed annually on Nov 9.

High Steward of England, one of the Great Olivers of State under the Eng. crown. The original duty of the H.S. seems to have been to place the dishes on the lord's table at solomn feasts. would appear that under the Norman would appear that under the Norman kings the office was vested in the Beaumont earls of Leacester, and passed by marriage from them to Simon de Montfort. After the latter's death in 1265 it was granted by Henry III. to his younger son Edmund, earl of Lancaster, for tyle. Edward II. configmed it to him in fee, and thereafter it descended with the earlicin and durdon of Lancaster. Un the and dukedom of Lancaster. accession of Henry IV. the office was merged in the Crown, and has since been created pro hac vice. The court of the created pro hac vice. The court of the H.S. formerly decided upon claims to do services at the coronations of the sovereign; but this duty is now performed by the Court of Claims newly appointed on each accession. A H.S. was also created to preside over the House of Lords on the trial of a peer. But after the trial and acquittal of Lord de Clifford in 1935 on a charge arising out of a motor couldn't a charge arising out of a motor accident it was suggested that this archaic mode of trial be abolished. Privilege of peerage in relation to criminal proceedings was abolished by the Criminal Justice Act, 1948. There is a H.S. attached to both univs. of Oxford and Cambridge, whose duty it is to protect the rights of the univ. courts

High Treason, see TREASON.

Highwaymen, mounted robbers who infested the high-roads of England during the seventeenth and eighteenth centuries. The most celebrated H, in hist. are: Dick Turpin (1705-39), Swift Nick Levison (hanged at York, 1684), and Jack ShepHighway. Common Law as to Highways.—A highway, which in common law (q.v.) is a term embracing carriage roads, horse or bridle roads, mere footroads, horse or bridle roads, mere looppaths, or any other public way, may be comprohensively defined as a way through or over lands of any ownership which is open to the public generally by virtue of an Act of Parliament, a proscriptive right, or by express or implied dedication. The commonest mode by which a public right of way is created is by dedication, which may take the shape of a formal invitation may take the shape of a formal invitation by the owner in fee simple (see ESTATE) of the land in question to the public to use a new or existing road, but which more often than not is merely implied from the owner's conduct. Generally speaking, uninterrupted, user for a substantial period of time acquiesced in by the owner creates a presumption of dedication which can only be rebutted by special directions. creates a presumption of dedication when can only be rebutted by special circum-stances. Uninterrupted user for twenty-one years gives the public an absolute right of way by prescription. Dedication may confer only a limited right, whether in respect of seasons, manner, or extent. A limitation in point of duration is void, for a dedication is either in perpetuity or for a dedication is either in perpetuity or not a dedication at all. It is to be noted that the H. Acts include in the statutory definition of H. heridges (not being co. bridges, or bridges repairable by the inhabs, at k wo of a hundred), towing paths, and navigable rivs., but not railways. Indeed every way which is open to the public is a H., and in this connection it is immaterial on whom is cast the burden of repair and maintenance. A street as defined by the Public Health Act, 1875, is usually, but not necessarily, a H.; a street under the Act being defined as 'any highway and any public bridge (not being a co. bridge), and any road, (not being a co. bridge), and any road, lane, footway, square, court, alley, or passage, whether a thoroughfare or not.' A H. is also usually a thoroughfare, but may, of course, be a cut-de-sac. The public right over a H. is merely that of passing along it. There is no right to use it as a place for public meetings or assemblaces, and there are say, recorded cases. blages, and there are sev. recorded cases showing that one's mere presence on a H. for ulterior purposes may well be illegal and actionable. For example, in the case of a man who repeatedly, and for the purpose of annoying, passed and repassed the plaintiff's window while the latter and his family were duning; and again in the classic case of Harrison v. Duke of Rutland, where it was held that a man had no right to go on to a H. merely for the purpose of using it to interfere with another man's right of shooting by preventing the grouse from flying towards the butts occupied by the shooters. A public right of way is, as the very term implies, restricted to the surface of the land over which it goes, and the mibsoil for ulterior purposes may well be illegal

to the owner of the soil; but in the case of most Hs. such rights are not of any practical value. A mere occupation road laid out through an estate purely for the use and convenience of the inhabs. is not thereby dedicated to the public; such private right may, however, co-exist with a public right of way, and though in general the former would be merged in the latter right, it may well be inherently a larger, and therefore independently subsisting right. A H. cannot at common law cease to be such by abandonment or non-user, for 'once a highway always a highway.' But by Act of Parliament, a H. may be destroyed, and such a course, e.g. in the case of Hs. running along dangerous cliffs, might well be advisable. Statute Law as to Highways.—Under the H. Act, 1835, as amended by the Local to the owner of the soil; but in the case Gov. Acts, 1888 and 1894, two justices have power to grant a certificate to 'stop' or 'divert' a H. if both the dist. and parcouncils (if any) concur in the proposal to stop or divert. The usual reason for stop or divert. The usual reason for diversion is that some proposed new way is more advantageous, and the only reason for stopping up a H. altogether is that the H. is no longer required. An appeal against the certificate of the justices lies to quarter sessions at the instance of any person aggrieved, who must give the dist, council fourteen days notice of appeal, and state the grounds of nust give the dist, council fourteen days; notice of appeal, and state the grounds of bis appeal. The matter will then in due course be tried before a jury. The duty of repairing and maintaining a H. is theoretically still upon the inhabs, of the per. in which it is situated, and an indictment for nuisance lies against such inhabs, at the instance of any one aggrieved if a at the instance of any one aggrieved if a H. is allowed to fall into disrepair. Nothing in the Local Gov. Act, 1929, with respect to main roads or co. roads affects the liability of any person or body of persons to maintain or repair a H. The Local Gov. Act, 1888, however, prac-tically absolved inhabs. from all liability, so far as main roads were concerned, by instituting the co. council the H. authority for such roads. The allocation of responability for maintenance of Ha. has been considerably modified by the Local Gov. Act, 1929 (see 'm/ra'). By a curious rule of law a H. authority is not liable to be proceeded against on indictment for a for misfeasance. The distinction is mainly academic, for a complaint of non-repair to the co. council is equally effective if the cost of repair of a H. is increased by extraordinary weight or traffic, the road authority may, under section 23 of the H. and Locomotives (Amendment) Act, 1878, as amended by the Locomotives Act, 1898, recover the expenses certified by their surveyor to have been incurred by reason surveyor to nave been incurred by reason of such traffic from the persons by, or in consequence of, whose order such weight or traffic has been conducted. It is entirely a question of fact in each case what constitutes extraordinary traffic, e.g. military manacuves, the erection of a mansion of factory in a remote rural dist. excessive weight of a single waron drawn implies, restricted to the surface of the land over which it goes, and the subsoil remains in the freeholder, or, if different freeholders' lands lie on either side of the th., then, generally speaking, the subsoil up to an imaginary line running down the middle of the road belongs to each adjoin ing landowner. Strictly speaking, the excessive weight of a single wagon drawn residuary rights in the surface also belong by a locomotive, may each constitute or

but apparently the true test for deter-mining whether traffic is extraordinary depends on what is ordinary traffic on the particular road, not on what other and even similar roads in the neighbourhood have borne without injury. To obstruct have borne without injury. To obstruct a H. is a criminal offence, and any member of the public may remove the obstruction. The owner of any animals which stray upon a H. (not running over common or waste land) is liable for damage occasioned thereby to adjoining property. By the Road Transport Lighting Act, 1927, Road Transport Lighting Act, 1927, every vehicle on any road was required, during the hours of darkness, to carry two lamps, each showing to the front a white light and one lamp showing to the rear a red light, and all the lights must be visible from a reasonable distance. There were special provisions as to bucycles, tricycles, and invalid carriages; bicycles not propelled by mechanical power were not required to carry a lamp showing a red light to the rear if an efficient red reflector is shown instead; and consults in the ight to the rear if an encient red renector is shown instead; and, generally, in these special cases, a single front white light was sufficient. But on the introduction of the black out, in Great Britain at the beginning of the Second World War a beginning of the second world war will we rear light was made obligatory for bicycles, etc. and the regulation has not been withdrawn. As regards horse drawn vehicles, the separate red light is not necessary if the front lamps serve the same purpose and provided no part of the vehicle or its load extends more than six feet behind such lamps. 'Darkness' in this context, means, as respects summer time, the time between one hour after sunset and one hour before sunrise, and, as respects the remainder of the year, the time between half-an-hour after sunset and half-an-hour before sunrise.

and haif-an-hour before surrise.

Maintenance of highways.—Important changes in the law of Hs., particularly in relation to the responsibility for maintenance and improvement, were made by the Local Gov. Act. 1929; but these changes do not extend to the administrative co. of London. Under this Act roads are divided into 'county roads' and 'ordinary bighways,' and into 'classified' and 'unclassified' roads, and these distinctions are made for the purpose of fixing the responsibility for maintenance. An the responsibility for maintenance. ordinary H. may become a co road by an order of the co. council, or by an order an order of the co. council, or by an order of the minister of transport made on appeal by a dist. council from the co. council's refusal or failure to make an order. Briefly, all Hs. in rural dists. and main or classified roads in urb. dists. are co. roads; and neither the maintenance and repair of a co. road by an urb. dist. council nor the delegation of functions in respect of a co. road to a dist. council will result in the road ceasing to be a co. road. A road in the Act of 1929 means a road classified by the minister of transport for the purpose of the Act. Since 1936. for the purpose of the Act. Since 1936, council may act as agents of the co. however, there has been introduced a third category of H.—the 'trunk roads.' By place a road in repair or notify the dist. the Trunk Roads Act, 1936, the minister of transport became the authority for 'the land such notice may be given whenever

result in extraordinary traffic. It is not print roads in Great Britain which con-easy to reconcile the cases on the subject, stitute the national system of routes for through traffic. But no road within the co. of London or within any co bor. is included in the category of trunk roads. The roads which became trunk roads are The roads which became trunk roads are listed in the first schedule to the Act; the total mileage of trunk roads in Great Britan is now 4500, and the minister of transport is responsible for their maintenance and improvement. The minister may, however, by agreement with any co. council or co. bor. council or urb. dist. council delegate to these councils all or any of his functions with respect to the metro. of his functions with respect to the maintenance and repair and improvement of any trunk road; but such functions may not be delegated to a bor. or urb. dist council with respect to any road outside the bor. or dist.; nor, except with the con-scut of the co. council in which the road is sett of the co. council in which the road is situated, may the minister's functions be delegated to the co. council with respect to only road outside the co. Even where there is delegation, the council merely acts as agent for the minister and in accordance with prescribed conditions, particularly in relation to securing ministerial approval for works expenditure. It is for the co. for works expenditure. It is for the co. council or other appropriate local authority to exercise the statutory functions, in relation to trunk roads, prescribed by the Restriction of Ribbon Development Act, 1935, unless they have relinquished those functions in the manner provided by the Local Gov. Act, 1929 (section 32).

To the minister of transport the Act of 1929 transferred all powers and dribes of

1929 transferred all powers and duties of any gov. dept. in relation to (inter alia) roads, bridges, ferries, vehicles and traffic thereon, with certain exceptions; but the Board of Trado retains all its powers the Board of Trado retains all its powers and duties under any local, special, or private Act, and the minister of health retains all his powers and duties in regard to sanctioning Boans by local authorities, under the Housing Acts, and in respect of the confirmation of by-laws. But the minister of transport has succeeded to the powers of the Road Hoard under the lovelengent, and Road Improvement. powers of the Road Road Improvement Dovelopment and Road Improvement Funds Act, 1919. By the Local Gov. Act, 1929, the rural dist. councils have censed to be the highway authorities, and the co. councils have taken their place; but the rural dist. council retains 'functions, which include powers and duties under the Local Gov. Act, 1894, as to rights of way, and encroachments on road-side wastes. The rural dist. council may also have certain functions of the co-council delegated to them as to mainte-nance and repair. The words 'County Council' in the Act of 1929 do not include co. bor., and for ordinary Hs. within a bor the bor. council is the H. authority. Where an urb. dist. has a pop. of more than 20,000 the dist. council may claim to exer-20,000 the dist, counsil may claim to exercise the functions of maintenance and repair of any co. foad, not including bridges, within their dist. The dist. council may act as agents of the co. council. The co. council may themselves place a road in repair or notify the dist. council to do so within a reasonable time, and such notice may be given whenever. the co. council are satisfied on the report of their surveyor that repair is required.

Road Traffic Acts.—The ever-increasing use of motor vehicles on H. has led to the passing of many Acts to regulate such traffic. The Road Traffic Act, 1930, consolidated the law by repealing some thirty earlier Acts, and made numerous amendearner Acos, and made numerous annua-ments and new provisions to keep abreast of the rapid development and universal use of motor vehicles. Motor vohicles used for the carriage of goods are dealt with under the Road and Rail Traffic Act. The minister of transport has wide powers of making regulations under the Road Traffic Acts. The ministry has compiled a Highway Code as authorised by statute. It is issued with driving licences, and copies may be obtained from the Stationery Office. It is intended as a guide to persons using the road, and may be revised from time to time. Failure to observe the code layer to frame in Itself. observe the code is not an offence in itself, but it may be relied on as tending to establish or negative the liability of a party to any legal proceedings. Under the Act of 1934 the minister of transport may establish crossings for foot passengers or make regulations as to the procedence of vehicles and foot passengers and, generally, as to traffic movement at or near a crossing and erect traffic signs in connection with the crossings and may call upon local authorities to submit schemes for providing such crossings. This Act also provides a general speed limit of 30 m.p.h. in 'built-up areas.' Speed limits for classes of motor vehicles other than ordinary passenger motor cars are prescribed in the same Act. The minimum ages for drivers of motors are: for motor-cycle, 16 years; for private car, 17 years; for vehicle weighing 2½ tons unladen (or over), 21 years. No person may use, or permit to be used, a motor vehicle unless covered by a policy of insurance in respect of third-party risk. Under the Act of 1934 it is the duty of insurers to satisfy claims in respect of third-party risks notwithstanding provisions in the policy entitling them to avoid liability, unless the policy was obtained by misrepresentation. Full provision is made in the Act of 1930, for the regulation of public service vehicles. The Speed limits for classes of motor vehicles regulation of public service vehicles. The use of certain roads and bridges by goodscarrying motor vehicles is also controlled by the Road and Roil Traffic Act, 1933. Every motor vehicle, excepting motor-cycles, must be fitted with a reflecting mirror.

mirror.

See Pratt and Mackonzie, Law of Highways (18th ed.), 1932; The Complete Statutes of England, or Halsbury's Statutes of England (2nd ed.), 1919 ff.; N. and Reatrice Wobb, The Story of the King's Highway, 1920; W. J. Hadfield, Highways and their Maintenance, 1934; G. Boumphrey, British Roads, 1942; C. W. Scott Giles, The Road Goes On, 1946; R. Jeffreys, The King's Highway, 1839-1943, 1949; Madge Jenison, Roads, 1919.

High Willhays, hill of Devon, England, the highest point on Dartmoor (2039 ft.) It lies 4 m. S.W. of Okehampton.

High Wycombe, see WYCOMBE.

Hilumaa, see DAGO. Hilarion, St. (c. 290-372), abbot, founder of the monastic system in Palestion the monastic system in races-tine. He was b. at Tabatha, and while studying at Alexandria, became converted to Christianity. About 306, through the influence of St. Anthony, he became a hermit, and lived in the deserts bordering

on Egypt, and inved in the deserts bordering on Egypt, and finally d. in Cyprus. The chief authority for bis life is St. Jerome. Hilarius (or Hilary), St. (c. 320-368), bishop of Poitlers, b. in Limenum (Poitlers) of pagan parents, and was converted to Christianity through his own studies. He was banished to Phrygia by the Emperor Constantius for his vehement controversies with the Arlans. He visited numerous churches in Asia Mison and pitterathe

communities for any constitution of the property of the proper views were strongthened. Two treatises imputed to him are usually incorporated the one with Augustine's, the other with

Ambrose's works,
Hilary (d. 168), pope, successor of Leo I.
(451), a native of Sardinia. He was
created archdeacon by Leo I., and



POPE HILARY

rigorously upheld the supremacy of Rome. When pope, he improved and enriched the monasteries and churches which had heen damaged by the Vandals.

Hilary, St., of Arles (401-449), b. in a tu. between Lorraine and Champagne, the netween Lorrance and Champagness of Lerins, the became bishop of Arles, and later deposed the bishop of Besancon, which seriously embroiled him with Leo I. Hilds, or Hild (614-680), patroness of Whitby. She was abbess of Hartlepool

or Heorta (c. 650). She ruled for twenty-

or Heorta (c. 550). She fuled for twenty-two years the monastery for monks and nuns at Whitby (Streoneshalh), which she had founded in 658. Hildburghausen, tn. of Thuringia, on the Werra, 19 m. S.E. of Meiningen. It was formerly (1683-1826) cap. of the duchy of Saxe-Hildburghausen. Pop. 4600. 6900.

Hildebrand, see Gregory VII.
Hildebrand, Adolf E. R. von (1847–
1921), Ger. sculptor; b. at Marburg; son
of Bruno H., writer on economics. Studied
at Nuremberg and Munich, worked in
Berlin. Studied in Rome, 1867-8; exhibited bronze statuette, 'Sleeping Shepherd Boy,' Vienna Exhibition, 1873.
Lived in Florence, 1874-92; working
chiefly at portrait sculpture—reigning
princes being among his subjects. He
designed fountains at Munich, Jena,
Worms, and Strasburg.

designed fountains at Munich, Jena, Worms, and Strasburg.
Hildegard, St. (1098-1179), visionary, seer, and an approciated writer, b. at Böckelheim, Germany. She is called the Sibyi of the Rhine, and was abbess of the nunnery of Distbodenberg, Lorraine, at which she was brought up. She founded the abbey of St. Rupert, near Bingen. See life by J. P. Schmelzeis, 1879.
Hilden, tn. of Rhineland, Germany, m. S.E. of Dusseldorf. It manufs. velvet, slik goods, carpets, machinery, etc. Pop. 20,000.
Hildesheim, tn. and episcopal see of Hanover, Germany, situated at the foot of the Harz Mis., on the R. Innersto. The Rom. Catholic Cathedral, which dates back to the eleventh century, noted for the beautiful bronze doors executed by

the beautiful bronze doors executed by Bishop Bernward, was hadly damaged, and its cloisters partly destroyed in the Second World War. It holds the sarcophagus of St. Godehard, and the tomb of St. Epiphanius. There are also the Romanesque church of St. Godehard, built in the tweifth century, and the church of St. Michael (burnt out), founded in the eleventh century, (burnt out) Rathaus, and the Wedekindhaus (1598), and the St. Michael Monastery, now a lunatic asylum. The guild-house of the the beautiful bronze doors executed by and the St. Michael Monastery, now a lunatic asylum. The gulld-house of the butchers (1529), a fine example of a wooden building was destroyed by bombing. The chief productions are sugar, tobacco, stoves, and machinery. H. was the seat of a bishopric from 822, and was one of the original members of the Hanseatic League. A unique collection of Rom. silver plate of the time of Augustus was found on the Galgenhery. E. of the

pub. in 1753, and his Dramatic Works in 1760. See H. Ludwig, The Life and Works of Aaron Hill, 1911; and A. Dobson Rosalba's Journal and Other Papers, 1915. Hill, Ambrose Powell (1825-65), Amer. Confederate general; b. in Oulpeper oc., Va.; son of Maj. Thomas H. Graduated, U.S. Military Academy, 1847. Fought at Williamsburg, Richmond, and second battle of Bull Run. Received surrender at Harper's Ferry, Sept. 17, 1862. Commanded: Div., Fredericksburg, Dec. 13, 1862; Reserve, Chancellorsville, May 2-4, 1863 (wounded); one of three corps into which Lee's army divided May 10, 1863. Engaged at Gettysburg, Bristow Station, Weldon Rallroad. Near Petersburg April 2, 1865, shot from his horse and killed. Clement (1877-1945), Australian

Hill, Clement (1877-1945), Australian cricketer. Considered by many qualified judges of the game to have been the best left-handed batsman ever known in the hist. of cricket. On all wickets and against any bowling combination, 'Clem' Hill controlled match after match in which he took part. Showed great promise as early as 1894-95 when he scored 150 (not out) and 56 for S. Australia against A. E. Stoddart's team. Came to England with G. H. S. Trott's team in 1896, being one G. H. S. Trott's team in 1896, being one of the mainstays of a famous eleven and surpassed in scoring ability only by Sid Gregory and J. Darling. Against Stoddart's second team in Australia in 1897–98 he scored 829 runs in 12 innings, his record being better than that of either A. C. Maclaren or K. S. Itanjitsinhji. Scored 200 for S. Australia in that season, but his greatest innings was in the fourth Scored 200 for S. Australia in that season, but his greatest innings was in the fourth test match, at Melbourne, when he made 188 runs out of a total of 323, against the bowling of J. T. Hearne and J. Briggs. When the Australians visited England in 1899 he headed the batting averages, his aggregate including a score of 135 at Lords. In 1901-92 against A. C. Maclaron's team in Australia he averaged 52 in ten innings in Test matches. He was also leading scorer of J. Darling's team in England in 1902, but on return to Australia was at length outrivalled by Victor Trumper. In 1907, however, against A. O. Jones's team he played a great innings of 160 at Adelaidie. Possibly his surest quality was an ability to master his surest quality was an ability to master any ball bowled on the leg stump; he was

tobacco, stoves, and machinery. H. was the seat of a bishopric from \$22, and was one of the original members of the Hanseatic League. A unique collection of Rom. silver plate of the time of Augustus was found on the Galgenberg, E. of the tm., in 1868. Pop. 62,500.

Hill, Aaron (1685-1750), Eng. writer, b. in London. On leaving Westminster School he travelled in Turkey, on which he pub. A Full and Just Account of the Present State of the Ottoman Empire (1709). His contributions to the drama include: Elfrid or the Frit Inconstant (produced at Drury Lane in 1709), The Tragedy of Zara (1735), and Merope (1749). He was included in Pope's Duncial, and retored in The Progress of Wit, being a Caveat for the use of an Eminent Writer (1730). His Works, including poems and letter were

master of his old school, and, like him. proved averse from exercising any kind of coercion on his pupils. A contributor to the Saturday Review (1869-84), he pub. after his retirement from teaching (1877), after his retirement from teaching (1877), a series of scholarly eds. of Johnsonian literature, including Bosvell's Life of Johnson (1887), and Dr. Johnson, his Friends and Critics (1878). His ed. of Johnson's Lives of the English Poets was pub. in 1905, with a memoir by H. S. Scott, and a bibliography.

Hill, James Jerome (1838-1916), Amer. raliway president, b. near Guelph, Ontario. He graduated at Yale Univ. and then worked in raliway offices in St. Paul, Minnesota. In 1870 he formed the

Paul, Minnesota. In 1870 he formed the Red R. Transportation Co., between Saint Paul and Winnipeg, and was the founder of a syndicate which built what is now the Canadian Pacific Railroad. He president of the Great Northern Railway, president of the Great Northern Railway, which he helped to build, from 1895 to 1907, and made of it one of the greatest railway systems in the U.S.A. It ran a steamship line to China and Japan. In his later years he was recognised as one of the leading railway authorities in the U.S.A

Hill, Sir George Francis (1867-1918). Eng. numismatist, antiquary and historian b. at Berhampur, India, son of Samuel John H., a missionary. Educated at John H., a missionary. Educated at Blackheath school for sons of missionaries (later Eltham Conege), Univ. College School and Univ. College, London, thence as an exhibitioner at Merton College, Oxford, of which he became an honorary fellow in 1931. Anct. hist, was his main subject, and he became a pupil of Prot. subject, and he became a pupil of Prof. Percy Gardiner, from whom he acquired his interest in numismatics. In 1893 he was appointed to the dept. of Coins and Medals, Brit. Museum. In 1897 appeared his first vol. in the great Gk. catalogue there, five others following in the next 25 years, covering the Middle East. These catalogues set a new standard for numismatics in their marshalling of numismatics in their marshalling evidence, discussion of problems involved, and accuracy of description. Editor of the Journal of Hellenk Studies and of the Numismatic Chronicle for many years. His study of It hist, and art resulted in learned works on Pisnello and the Corpus of Italian Medals before Cellini (1930). His appointment as director and principal librarian of the Brit. Museum (1931–36) was marked by the acquisition from the Soviet Gov. of the Codex Sinaiticus (q.v.) and of the Eumorfopoulos collection of Oriental antiquities, the latter shared with the Victoria and Albert Museum. He spent his retirement in writing a hist. of evidence, discussion of problems involved, spent his retirement in writing a hist, of Cyprus (1940-48) carrying the story of the is, down to 1571 with much detail on the Lusignan dynasty. K.C.B., 1933. Vice-President of the Society of Antiquaries and a member of the Royal Com-

mission on Historical Monuments. Hill, Sir John (c. 1716–75), Eng. author,

pub. a trans. of Theophrastus's History of Stones (1746), and wrote many botanical works, including The Vegetable System (26 vols., 1759-75).

Hill, Octavia (1838-1912), Eng. social reformer, was educated at home. Encouraged by Ruskin, she bought three cottages in Marylebone (1864), and was so successful in increasing the self-respect and improving the material welfare of her tenants that the Countess Ducle gave into her charge a property in Drury Lane. her charge a property in Drury Laue. Latterly, she was at the head of a staff of assistants who, between them, collected the rents of 6000 dwellings and tenements in the metropolis. Pubs. include Homes of the London Poor (1875) ** Our Common Land (1878)**

Land (1878).

Hill, Rowland (1744-1833), Eng. preacher, the sixth son of Sir Rowland H., first haronet, b. at his father's seat, Hawkstone Park, Shropshire. Educated at Shrowshury and Eton, and whilst still young received deep religious impressions from his eldest brother Richard. Entered St. John's College. Cambridge. in 1764 St. John's College, Cambridge, in 1764, and whilst there visited the sick and preached wherever he could. In 1769 he graduated P.A. with honours, and endeavoured to obtain orders. Ordained June 1773 to the curacy of Kingston. Somersetabilite, but refused priests orders on account of his unconventional style. He continued to preach to immense congregations. In 1783 Surrey Chapel was built for him, which remained the ordinary scene of his labours till the end of his life, and under its pulpit he was buried. H. was deeply interested in Sunday-schools, and there were thirteen attached to Surrey ('hapel with over 3000 scholars. He took a prominent part in all philanthropic and religious movements, and his earnest, eloquent, and eccentric preaching attracted large congregations. See life by Rev. Edwin Sidney (4th ed.), 1861

Hill, Rowland, first Viscount (1772–1842), Brit. general, nephew of the preacher Rowland Hill, was b. at Preed Hall, near Hawkstone. He commanded the 90th Regiment in Abercromby's Egyptian expedition (1801), and served throughout the Peninsular war as Sir Arthur Wellesley's ablest coadjutor. He cantured the forts of Almera, for which captured the forts of Almarez, for which he was created baron (1814). He disne was created baron (1514). He distinguished himself by his brigade charge at Waterloo, and succeeded Wellington in 128 as commander-in-chief. See life by Rev. E. Sidney (1815).

Hill, Sir Rowland (1795–1879), originated the commander that the commander that

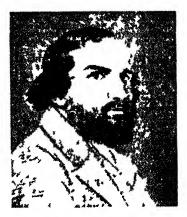
nator of the penny postal system, b. at kidderminster. As a boy he was interested in mathematics, and later in life became engaged in mechanical inventions. lis ideas on a uniform rate of postage, regardless of distance, were pub. in pamphlet form, Post Office Reform (1837). In 1839 he was attached to the Treasury, and his schemes were realised in the following year. It was dismissed from office when the Conservatives came into b. at Peterborough. He set up an apothe-cary's shop in St. Martin's Lane, London, office when the Conservatives came into became editor of the British Magazine (1746-50), and contributed to the London Whigs was appointed secretary to the Advertiser and Literary Gasette. He also Postmaster-General (1846). In the same

Regiment were massacred by Arabs in the course of a rising against Brit manda tory rule (see IRAQ) Pop (liwa) 263,000

(tn) 30 000 (tn) 30 000

Hillel, called Hazaken (the Flder') and
Hababi (the Babylomin) (c 75 BC AD 10), Jewish rabbi, was a native of
Babylon When he was already verging
towards old age, he began to study law
under Shemaich and Abtalion in Jeru
salem, and soon grew famous fer his pio
found learning where by according to the
Talmud, he computated all toproves lalmud, he comprehended all tongues even those of trees and beasts. Being well nigh penniless, his learning was only acquired by exceptional zeal and self demail. It is unlikely that he was ever president of the Sanbediin vet his humility and loving kindness and what has been described as the weetness and light of his personality ensured the popularity of his teaching which, like that of Jesus, was ever are seftom sacerdotal traditionalism and blind adherence to legal ordinance

Hiller, Ferdinand (1911 97) (Jer musi cal composer, b at Frankfort on Main played a concerto of Mozart at the age of



FERDINAND BILLER

ten, and in 1827 was present at the death bed of Heethoven He visited Weimar Vienns (with Hummel, his master), Pars (where he lived from 1828-35) Italy St Petersburg, and England, etc From 1850 till his death, he was municipal capell-master at Cologne, where, besides organis-

vear he was presented with £13,960 as a public appreciation of his services. See the services of a Great Reoland Hill, the Story of a Great Reform, by his daughter, 1907.

Hillah, Hilla, or Hellah, the and liwa (prov) built of materials from the ruins of Babylon near by It is on the kuphrates 60 m S of Bagdad, Iraq H is a resting place for pilgrims to Meshhad Ah and Meshhad Husein I the manufactors and these display conspicuous silk and woellen goods. Near H, in 1920 some 300 men of the Manchester Regiment were massacred by Arabs in for his fine interpretation of Bach and Beethoven

Hill Figures, see WHITF HORSE

Hill Figures, see White Horse Hill-forts are, as their name implies fortifications exceted on the top of a steep chiff or mountainous crag. The summits of hills like is and fens, were positiarly adapted to serve as the last refuge of a native race in a country invided by a stronger people. So H are found of great antiquity, constructed by uncivilised peoples, as 1) Wilson says, the simple circular H, whether we have the mere people as 1 wheren we have the mere rudhentary efforts of a people in the mfancy of the arts. To this category belong the rude earthworks found on the top of many peaks in the But Isles Scotland is especially rich in H, many of which are of a somewhat more advanced type. I wo or three concentric circular ramparts defend the summit of the hill, so that as the invading party storned one line of defence the defenders might retire Liadually into their innermost stronghold The H which is at the summit of White Caterthun in Forfarshire may be described in some detail as being type at of many others. The hill in question is 976 ft high. The first resistance to an attacking force is offered by a double entrenchment 200 ft below the summit the formation of the cliff then procludes further advance save on one side. The end of this path by 200 ft the width of the walls in which are found chambers as in the light cishels (q i) is 26 ft Among other H
in the Brit Isles may be mentioned Arbory
1 rt in Lanarkshire Dun Muray in Dun Muiray in Angylishire, and Dun Arigus in the Aran ledes In many cases of course a H was the residence and head marters of a wirrior chief or a robber baron, as in the medieval ages In this class come the H of the wild tribesinen of Afghanistan and the VW frontier of India For the vitri fication of the stones of H, see under VIRUFIED IORIS See Dr. D. Christison, I arly Fortification in Scotland, 1818, F | Burrow, Ancient Larthworks and Camps 1924

Hillgrove, gold and antimony mining to on Bakt's Creek, bandon co, 20 m b of Armdale, New South Wales. ົດດັ Pop

Pop 00
Hillhead, Scotland, a suburb to the NW of Glasgow Hop 4000
Hilliard, Nicholas, miniature painter and Lidsmith painted Queen Elizabeth and Mary Queen of Scots, and for twelve years enjoyed the exclusive privilege of executing portraits of James I and other members of the royal family. Charles I. counted among his art treasures a jewel

of H.'s workmanship with an enamelled picture of the field of Bosworth, and the likenesses of four sovereigns. See J. Pope-Hennessey, A Lecture on Nicholas Hilliard, 1949

Hillsborough, or Hillsboro, cap. of Hill co., Toxas, U.S.A., 50 m. S.S.W. of Fort Worth. It is served by three railways and also by the Texas Ricctric Interurban. It manufs. cotton, hosiery, leather, flour.

Pop. 7700.

Hillsborough: (1) tn., Alberta co., New Brunswick, Canada: on Petitcodiac R. There are valuable granito-gypsum quarrincre are valuable granico-gypatin quaries and coal mines near. Pop. 1000. (2) par. and mrkt. tn., N. of co. Down. Ireland, 12 m. S.S.W. of Belfast. Itschief industry is linen manuf. Pop. 2000. Rural dist. 22,000. (3) Chief tn., on the coast of Carriacou, an is. N. of Granada, Brit. W. Indies.

Hilledgle cap. of H. co., Michigan

Hilisdale, cap. of H. co., Michigan, U.S.A., on the R. St. Joseph, 90 m. S.W. of Detroit. Hilisdale College is situated here. It is served by the N.Y. Central

here. It is served by the North Contain Railway. Pop. 6300. Hill 60 and Hill 70. Hill 60 is situated inst. S.E. of Ypres, and during the First World War was concerned with all the operations towards the E. and S. of that place. Small as the hill was, its elevation gave it command over a considerable expanse of country, and in April 1915 it was the scene of such hard fighting, victory ultimately resting with the Brit. Hill 70 is situated just N. of Levs and E. of Loos. In the 1915 battle of Loos it changed hands during the last week of Sept. Here. again, its height, though little, gave it command over a considerable area, which was particularly valuable from an artiller, observation point of view. It was here that the Guards Div. greatly distinguished liself by capturing most of the hill.
Hill States, general name for the small

Hill States, general name for the small native states on the S. slope of the Himalayas in the vicinity of Simla, India.

Hill Tippera, Indian native state of about 4000 sq. m., at the extreme E. of E. Bengal, Pakistan, and adjoining the dist. of Tippera. It is for the most part thick forest land, and produces cotton chillies, and rice. The inhabs, are hill tribes. Argartala, the cap., is 70 m. N. E. of Dacca.

Hilton, John (1804-78), Eng. surgeon. He attended Guy's Hospital first as a of anatomy (1828), assistant-surgeon (1845), and surgeon (1849). As president of the Royal College of Surgeons, he gave the Hunterian address in 1867. tomical John.' as he was called, was joint-founder with Towne of the excellent museum of models at Guy's, and was the His Rest foremost anatomist of his day. and Pain (1863) is a valued addition to medical literature.

Hilton, William (1786-1839), Eng. dnter. In 1820 he was elected to the nainter. Royal Academy, which to-day possesses royal Academy, which to-day possesses, his masterpiece, a representation of 'Christ crowned with Thorns' (1823). His other pictures include' Rebocea and Abraham's Servant' (1829), and 'Edith finding the Body of Harold' (1834),

Hilversum, tn. in the prov. of N. Holland, 18 m. S.E. of Amsterdam. It manufs, horse-blankets and carpets. It is a popular summer resort, and its neighbourhood is attractive. It has a large wireless station. Pop. 84,200. Himalaya Mountains, in Central Asia, most elevated highland system in the world. The word Himalaya is Sanekrit, and means, 'Abode of Snow,' the same Aryan root being preserved in the Ck. xilpa, snow, and the Lat. kirns, winter. The il. M. siretch from the seventy-second to the ninety-sixth meridian E of Greento the ninety-sixth meridian E of Greento the ninety-sixth meridian E of Green-wich, and, with a breadth varying from 180 to 220 m. form a broad, sweeping bar-rier between Tibet and the Indian penin-sula from the W. confines of Kashmir to the E. limits of Assam. Undoubtedly they belong structurally to the great plateau of Central Asia, of which they may be regarded as forming the S. scarp. On the Indian side the slopes of the main ridge are precipitous right down to the marshy 'Tarni' or 'Tariyani.' This is a bolt of grassy lands, about 12 m. wide, traversed by many sluggish streams, along whose banks are treacherous morasses covered banks are treacherous morasses covered with tall reeds: It fringes the Pakistan, Indian, and Nepal frontiers for almost 500 m. from W. to E. Towards Central Asia the fall of the H. M. is gentle. Broadly speaking, their direction W. of Mt. Everest, the highest known peak on the globe (29,141 ft.), is N.W. and S.E., but from this height to the boundaries of China the lie is almost due E. It is a Othina the lie is almost due E. It is a mistake to regard the H. M. as a single unbroken chain; they are rather a series of ridges roughly parallel, whose symmetry is confused by a multitude of substitute of subs sidiury spurs, which strike out from them in all directions.

What is sometimes called the Indian watershed separates into two classes the rivs. which pass out to the Indian Ocean : those which cut a direct way through the mts. on to the plains of India, and those which after being gathered on the top of the tableland reach the sea by two streams which set out at distant points towards opposite limits of the chain. But the great divide, sometimes referred to as the Turkish watershed, is the ridge of the N. rango, which is the natural clearage line between the rivs. which disappear somewhere in the level stretches of Mon-golia and Turkestan and those which eventually join the Ladian Ocean. The Indian watershed is remarkable for its beight, which averages about 18,000 ft. between the Brahmaputra and the Indus. The valleys traversing the highlands from the watershed to the Indian plains are gigantic gorges and offer small encouragement to human habitation. Yet some ment to human habitation. Yet some few, with an elevation of from 6600 to 7000 ft., are fast becoming favourite situations for summer retreats of Europeans eager to escape the sweltering heats of Bengal. Other valleys reach right up into the line of highest summits without rising to a higher elevation than 3000 ft., and thus harbour tropical heat and vegetation that the foot covergence heat and vegetation that the foot covergence has the first the foot of recovergence highly the second s tation at the foot of snow-capped heights. For the mest part the valleys slope gradu-



Frank Smythe

WEDGE PEAK

One of the peaks of the Kangchenjunga group which rises 8000 ft. above the Kangchenjunga gizcier.

crossed longitudinally by sev. valleys which confine the Indus and other rivs. for bundreds of miles before giving them an opening southward. The Central Himalayas contain the highest summits in the layas contain the highest summits in the world, and comprise the regions of Hundes, Garhwal, and Kumaon, which were scientifically surveyed in 1892. They are sometimes called the Nepal Highlands and extend from the source of the Indus to the Tista—an affluent of the Jumna The highest group of mts. in the world is in the Karakorum, not in the H. M. Other outstanding crests besides Everest are Kangsheniungs (Kunghaniungs (1989) 51. chenjunga (Kunchinjunga) (28,225 ft, the third highest mt. in the world), on the Sikkim frontier, N. of Darjeeling, and Dhawla-giri (26,286 ft.) in the W. Some conception may be conveyed of the stupendous scale upon which these mts. are built, if the peaks which lie between the seventy-eighth and the eighty-first meridians— a distance under 150 m. in length—or rether their main groups, are enum-

ally till within 20 m. or so of the line of greatest elevation, and afterwards often shoot upward from 5000 to 10,000 ft within a very small distance.

It is convenient to divide the H. into three sections. The W. begins from that point where the Indus turns southward between Glight and Kashmir, a point which is marked by Mt. Nanga-Parbat (26,629 ft.). This section, which also contains Nanda-Devi (25,661 ft.), is not conspicuous in well-marked ranges, but it is the fight of the plains of the plains of the plains, there rises a sandy, waterless ridge, known as the Bhabar, whose average elevation is some 4500 ft. This tract is densely forested and absorbs all the streams which flow down from the outer highlands, but as it unfrom the outer highlands, but as it undulates down to the Tarai the waters are collected together and once more reappear above the surface. The easternmost section covers a great part of Sikkim, Bhutan, tion covers a great part of Sikkim, Bhutan, and N. Assam. Its lottlest peak is Chumolhari (23.933 ft.), but 16,000 ft. probably represents the mean altitude. There is still a wide field open to ambitious surveyors in this part of the mts., for the lower reaches of the Saupo have nover been traced, and little is known of the E. uplands.

There are naturally great variations of climate at different heights and in different regions of the H. M. A comparison be-tween langes in the W. and E. shows that the latter enjoy a warmer and more equable but also a wetter climate. More-over, the forest tracts are more widely dispersed in the E., and the area of lands dispersed in the E., and the area of lands under cultivation is probably less. Both the meteorological conditions and the scenery in the W are similar to those of S. Europe, provided, that is, that the Himalayan altitude be over 5000 ft. The snow line is much higher on the Tibetan than on the Indian side, because the latter has the greater showfall. On the S. ex-posures of the Himalayas there are perposures of the himble and there are perpetual shows to within some 15,500 ft. of the scalevel, whilst at the top of the N. tableland of Thet the show line is actually as high as 20,000 ft. Precipitation is naturally greatest on the slopes of the outermost spurs, and by the time the limits of Tibet are reached, beyond the line of highest peaks. It is so small as allimits of Tibet are reached, beyond the line of highest peaks, it is so small as almost to clude measurement. Bain falls between May and Oct., and the season is known as the S.W. monsoon, which is accompanied by moisture-laden winds from the S.W. As regards tem., both the ann. and diurnal range diminish with increase in elevation, whilst the variation of temp according to altitude is greatest in summer. The rivs. hardly ever freeze, probably because they are too rapid. Glaciers descend much lower on the outer than on the Tibetan slopes. On the valleys of the latter they come down to within than on the Tibetan slopes On the val-leys of the latter they come down to within 15,000 ft of the sea-level, but on the S. faces 11,500 ft. is a normal limit. In different parts Alpine, European, and trop-ical flora abound; the Sal, Toon, Sissoo, and Deodar supply the only timber of com-mercial value; cereals, fruit, and tea are grown with success up to a height of 7000 ft.

The H. M. afford the supreme illustra-tion of the sublimity and incomparable grandeur of mt. scenery. The reader has only to remember that the mean elevation omy to reinter that the mean elevation is some 18,000 ft., and that at least forty heights exceed 24,000 ft., to grant the truth of the assertion that the great mt. solitudes of the Himalayas, . . . the apparently endless succession of range after parently endless succession of range after range, of ascent and descent, of valley and mt. top, of riv., torrent, and brook, of prediptous rock and grassy slope, of forest and cultivated land, cannot fall to produce impressions of wonder and awe of produce impressions of wonder and awe of such intensity as can be conjured up by no other range in any quarter of the globe. (F. S. Smytho, The Kangrhenjunga Adventure, 1930). Numerous expeditions have been organised for exploring the peaks of the II., apart from sev. to Mt. Everest (q.r.). As secently as 1936 a small Anglo-Amer. expedition, organised by Prof. Graham Brown reached the summit of Nanda Boyl in the Gharwal II., after incredible difficulties (Aug. 29, 1936). mit of Nanda lovi in the Gharwal II., after incredible difficulties (Aug. 29, 1936). This was the greatest feat of Himalayan mountaineering ever accomplished. The two members who reached the summit were N. E. Odell and H. W. Tilman, both Englishmen. Two disasters overtook Ger. attempts to climb Nanga Parhat in 1936 and 1937. In the first many Ger. and native lives were lost in a storm between the higher armys bud hear property. 1930 and 1937. In the first flady ocrand native lives were lost in a storm before the higher camps had been properly estab.; the second under Dr. Karl Wen was frustrated by an ice avalance (June 5, 1937), in which all but one of a party of eight and their six Nepalese porters were overwhelmed. See S. C. Burrari and H. H. Hayden, Sketch of the Geography and Geology of the Himalayan Mountains, 1907-08; W. Whistler, In the High Himalayas, 1921; A. Albers, Itmalayan Whispers, 1926; F. S. Smythe, The Kangchenjunga Adventure, 1930, Kamel Compured, 1932, and Camp Six, 1937; E. E. Shipton, Nanda Devi, 1936; H. W. Tilman, The Ascent of Nanda Devi, 1937; Paul Bauer, Himalayan Campaign, 1937; Sir F. Younghusband, Heart of a Continent, 1937; A Helm and A. Gaussor, Thron der Gotter, 1938; W. Noyve, Mountains and Men, 1947. See also under Everkest, and the various accounts of the Everest expedition.

Himera.

Himmel, Friedrich Heinrich (1765–1814), (ter. composer, profited much by the patronage of Frederick Wm. II., who besides giving him a three years' musical education and sending him to Italy for two years of further study, gave him, on two years of further study, gave nim, on Reichardt's dismissal, the court-capell-meistership of Berlin. II.'s Travercantale was especially written for the king-tuneral in 1797, and his opera Alessandr, was the result of a commission from the Czar. But his finest operatic work was Franchon, das Levermächen (1801), for which Rotzebue wrote the libretto. Despite their melodic charm, his songs and missioners sonates are rearly porturned. planoforte sonatas are rarely performed.

Himmler, Heinrich (1900-1945), Ger. Nazi leader, chief of the Gestapo, b. at Munich of a middle-class family and educated at the High School of Landshut, Bavaria. At seventeen he joined a Bavarian infantry regiment as a cadet. Leaving the army in 1919 he studied at the Munich Technical College and, later, was employed at a nitrate works; then in 1928 he turned to poultry farming. He was an early member of the Nazi Party of Strassor (see HITLER) and in 1929 Hitler was an early member of the Nazi Parcy of Strassor (see Hitler) and in 1929 Hitler appointed him leader of the S.S., which was then the Black Guard or Hitler's bodyguard. He began early to study systematically the records of the Party chiefs and of their subordinates, and so accumulated a great mass of information about individuals which eventually gave about individuals which eventually gave the Gestapo so much power for blackmail. Hitler gave him a free hand in the development of the Black Guard as a strong carefully selected semi-military corps. When litter decided on the purge of 1934 (see HITLER), H. and his force were the instruments of assassination. It was, perhaps, H.'s greatest political feat that he succeeded until the Second World War was well advanced in disquising the real was well advanced in disguising the real purpose of his organisation. The S.S. had already assumed the functions of the police and was controlling the home front as a whole when he acknowledged the fact in 1935. But he remained silent in the face of demands from the Army Command that the S.S. should not interfere in Army affairs, built up a completely inde-pendent force—the Waffen S.S. equipped with the most modern weapon—and insinuated his agents into the Wehrmacht with the most modern weapont—and maintated his agents into the Wehrmacht it-elf, spreading his tentacles throughout all branches of (ier. life, liesides organising the Gestapo in Germany and beyond the frontiers he estab. a Fifth ('olumn (a.v.) wherever the opportunity offered. After the attempt on Hitler's life in 1944 (see Hitler) he was the open mester of Germany. He took command of the home army, suppressed the elements of revolt and organised the lovies of the Volkssturm. When the final Russian offensive approached Berlin in 1945 he headed a section of the defences, and it was he who in the last days of the Reich cap. made overtures for capitulation. The fearful chapter of Germany's reign of terror was primarly his work though it must not be supposed that he did not find numerous and fanatic coadjutors; but his was the baneful master mind behind the horrors that took place in Germany the horrors that took place in Germany and in the conquered ters. He was the cold and ruthless instigator of reprisals against civilians and of similar crimes. He typified the most extreme element in the forces of Nazi revolution, and caused it to become the predominating force in Ger. politics. Yet in appearance he betrayed nothing of his true character, being small in stature, insignificant looking and shy in manner. It cannot be assumed that his actions were governed solely by blood lust. His motives were deeper. He organised a vast machine of political oppression, and instigated the mass murders in the terrible concentration

camps (q.v. and see also BUCHENWALD, BELSEN) of men and women—Gers., Russians, Poles, Czechs—for the ake of what he would have called 'posterity' what he would have camen posterny—
not for a Germany victorious in the war
but for a Germany 'reborn' through the
extermination of all who might stand in
the way. This rebirth of the nation was
to be achieved through his instrument—
a body of Gers, selected for their supposed a body of Gers, succeed for their supported racial characteristics (See Aryan Para-Graph) and educated by him in the belief that the 'regeneration' of the individual according to National Socialist principles was an essential factor in the enduring dominion of the world; and military condominion of the world; and military conquest by Germany was, in his view, no nore than a condition precedent to the foundation of a new ruling class exclusively Ger. and privileged to be the embodiment of the 'Herrenvolk.' His part in the end of Narism is obscure. With Hitler dead he made his clumsy move for contribution. With Hitler dead he made his clumsy move for espitulation, trying vanly to play off the W. Allies against Hussla. He did not ask that his own life should be spared; that he knew was forfeit. He was captured, after the Ger. surrender, at Bremeryorde near Bremen trying to get away with some other Gers with the aid of false identity papers and more or less disguised. His captors, Bit security police, took him and his companious to an internment camp for interlogation, and internment camp for interrogation, and one of the latter disclosed his identity. He was then removed to Brit. Second Army headquarters, but in Luneburg while being medically examined before being handed over to the appropriate authorities as a war criminal he succeeded in taking cyanide of potassium from a phial concealed in his mouth, dying almost at once.

Hinckley, mrkt. tn., 13 m. S.W. of Lelcester, England. It is an anct. tn. on Watling Street, and has mineral springs. The chief trade is in boots, shoes, hoslery, and coarse pottery. Pop.

shoes, hostery, and coasts of the stateman and Brit. Colonial governor; b. in Cork, Ireland; youngest son of Thomas Dix H., LL.D., Presbyterian minister. Received classical education at Fermoy and Belfast. Clerk to a Belfast, firm of slipowners, emigrated in 1831, opened warehouse in Torouto. A Liberal, he estab. the Leanuner, 1833. Liberal, he estab. the Lxanuner, 1833. Elected to first parliament of 1 pper and Lower Canada 1841, inspector of public accounts, (or receiver general) 1812-43 in account. Or receiver general) 1812-43 in the Baldwin-Lafontaine Gov. Defeated in election of 1844, estab. the Filot, Montreal. Again inspector-general, 1818-1851. Joint Premier with A. N. Morin, 1851-54. Governor of: Barbados, 1853-1862; Brit Gulana, 1862-69. C. B., 1862; K. C. M.G., 1869. Itelurned to Canada; minister of finance, 1869-73. Suffered through failure of a bank of which he was president. Ed. Journal of Commerce, Montreal. Made sev. official visits to Washington and London. His gov. rendered important services in the matter of railway building and in negotiating the of railway building and in negotiating the lieutenant in the 18th Infantry Regiment. reciprocity agreement with the United His mother was the daughter of Surgeon-

States in 1854. In the struggling colony, as was Canada a century or more ago, money for the promotion of railways was not easily obtained from the imperial gov. whether to bring the maritime provs. to the lakes or for opening up the W. before the Amer. could get there for their own commercial benefit. Hence the methods of H. as a railway promoter were coarse, but he was a first-rate business administrator in politics, though, being a man of crude sensibilities, he hardly emerges in Canadian hist, as a very interesting figure. The most instructive period of H.'s political life is before 1851, when he was occupying himself in building up the Reform party as the instrument through which responsible gov. was to be secured. On his return to Canada in 1869 he was at on in roturn to Canadian in 1700 ne was aconce pressed into service by Sir John Macdonald as finance minister—a tribute to his recognised ability. But he had by then lost touch with Canadian affairs and resigned in 1873, and it was an years after that the he hereman president of the file. that that he became president of the ill-fated City Bank of Montreal. H. pub. Reminiscences of his public life in 1884. In 1907 Stephen Leacock pub. the life of II., in the 'Makers of Canada' series. R. S. Longley's Sir Francis Hincks (1943) is not so much a biography as a ' study of Canadian politics, railways, and finance in the nineteenth century.'

canada politics, talways, and maner in the nineteenth century."

Hinomar (c. 806-882), archishop of Rheims from \$15; was educated in the abbey of 5t. Denis, and held the abbacies of Compiègne and 5t. Germain before he attained to his archibishopric. He was a bitter opponent of Gottschalk, the refractory monk and champlou of predestination and exposed his herestern a series of theological polenics. At metropolitan, he had excommunicated his suiragan bishop, Rothad; by eventually reinstating the offender, he undoubtedly encouraged papal autocracy. Yet in the matter of the sovereight of Lorrame he boldly refused to countenance Pope Adrian's interference.

Hind, name given to the female of

Hind, name given to the female of Cereus claphus, the red-deer, a ruminant ungulate mamual belonging to the Cervides; hart is the correlative term for the

male.

Hindemith, Paul, Ger. musician, b. at Hanan, 1895. Studied at Frankfort. Viola-player and conductor in the Frank-fort Opera House orchestra From 1927, prof. of composition at the State High School of Music, Berlin. As a composer School of Music, Berlin. As a composer he is important and prollific in the modern Ger. school, and has written much chamber music, operas, song-cycles, including Die junge Mayd, and one-act operas, among them sanda Susanna and Cardillac.

Hindenburg, Paul Ludwig Hans von Beneckendorf und von, (1847-1934), Ger. soldier and President of the Ger. Republic, bat Posen. He came from the Beneckendorf stock, which took the name of Hindenburg in 1789. The majority of his immediate ancestors had been soldiers, and he claimed himself to be 'the son of a soldier.' His father at the time being a lieutenant in the 18th Infantry Regiment. Gen. Schwichart. In 1859 he entered the of chivalry among his officers, efficiency Cadets' Academy at Wahlstatt and in 1865, became a 2nd Lieut. In the 3rd ideal of service generally. He was particularly paign was the Austro-Prussian of 1866, in propie of Oldenburg, whose manners paign was the Austro-Prissian of 1866, in which he was wounded in the head. He was a deeply religious man, simple and direct, and his conduct during his first spell of active service gave evidence of these qualities. He gained the Order of the Red Kagle (4th Class) with swords for his services. On the outbreak of the



PRESIDENT VON HINDENBURG

Franco-Prussian war of 1870-71 he was adjutant of the 1st Battalion of his regiment. He showed his feurlessness in this campaign by carrying out his duties with an utter disregard of the shot and shell flying about him. In 1873 he entered the Kriegsakadome, joined the General Staff in 1878, and was promoted captain. He in 1678, and was promoted captain. In was posted to the Headquarters Staff of the 2nd Army Corps at Stettin. Here he married the daughter of Gen. von Speining. He had three children—one son and two daughters. In 1881 he was transferred to the 1st 10v. at Königsberg. where he was fortunate to serve under the Vernois, to whom he owed much, and in 1886 he came under the influence of the great Moltke, to whom he was also in-debted. In 1889 he transferred to the war ministry, and took over a section of the common war dept. His former chiof

of chivalry among ins onlevers, embendy and discipline in the battalions, and a high ideal of service generally. He was particularly happy among the quiet, homely propie of Oldenburg, whose manners strongly appealed to him. In 1896 he was appointed Chief of Staff to the 8th Army Corps at Koblenz, to the command of the 4th Army Corps in 1905, and retired from the service in 1911. On the outbreak of the war of 1914, he was not immediately recalled to active service, but the retreat of the Eighth Army in E. Prussia demanded a new commander, and H.'s acquaintance with E. Prussia marked him out for appointment in preference to Ludendorff. Soon afterwards he won the victory of Tannenberg (q.v.) over Samsonoff and, turning against the army of Rennenkampf at the first battle of the Masurian Lakes, routed that general too. Masurian Lakes, routed that general too. He was then promoted to be commander of the Eighth and Ninth Army Group which Falkenhayn was leading against the Russians in Poland. The Ninth Army reached Warsaw but the Eighth was forced to withdraw to the Masurian Lakes again, to withdraw to the Masurian Lakes again, and it was only when he received the Tenth Army as reinforcements that H. again defeated the Russians at the Masurian Lakes. Already made a field marshal, his fame was now greater than that of von Mackensen, whose Austro-Ger. armies, in the middle of 1915, had driven the Russians out of both Galicia and Poland. In 1916, after the battle of the Somme, he was transferred to the W. Front, being given the supreme command the Somme, he was transferred to the W. Front, being given the supreme command of the Ger. Field Army, with Gen. Ludendorff as his First Quartermaster Gen. He organised the retreat to the famous Hindenburg (or first Siegfried) Line, while abandoning the offensive against Verdun. But he won no other great victory and, on Nov. 11, led his armies into Germany, a defeated communider, but with his spirit unbroken and having to his credit the successful planning of a great retreat, followed by an orderly demobilitation. By no means a brilliant strateriet. It was a sound general orderly demobilisation. By no means a brilliant strategist, II. was a sound general

brilliant strategist. H. was a sound general and steadfast in purpose
There seems little doubt that his victories were achieved largely with the advice of Gens. Ludenderfi and Hoffmann. After the Armstree, he retired to Neudeck. Despite the defeat of Germany, H. remained a legendary figure with the Gerneople, who had never forgotten their Russdan invaders. In 1925 he was elected President of the Ger. Republic in succession to Ehert. A monarchist at heart, it sion to Ebert. A monarchist at heart, it was believed that he might support the restoration of the monarchy; but he had a high conception of duty and of loyalty, and he followed a strictly constitutional groat Moltke, to whom he was also in and he followed a strictly constitutional debted. In 1889 he transferred to the course, until the economic crisis and the war ministry, and took over a section of the course, until the economic crisis and the var ministry, and took over a section of course, until the economic register at the time. Here he was engaged in drawing the field ongineering regulations and determined by means of emergency and ruled by means of emergency decrees; he became the object of bitter tails connected with heavy artillery. In 1893 he was appointed to command the refused to accept as Chanceller. In 1893 he was appointed to command the refused to accept as Chanceller. In the always endeavoured to outlivate a sense!

of thought and restraint. See life, 1936, by Major Hindenburg, his nephew.

Hindenburg Line, otherwise Siegiried Line, name given to the line of field fortifications taken up by the Ger. armies in their retreat or withdrawal following the battle of the Somme, 1916. The withdrawal was, to some extent, an acknowledgment of defeat on the Somme; but with characteristic resourcefulness, the Ger. High Command had prepared the field fortifications and works of this line so as to constitute it the most formidable detensive system theretofore evolved by the skill of military engineers. Its alternative name, Siegfried Line, was equally designed to inspire the Ger. soldiers to hold the system at all costs; and the fact that the Ger. High Command really believed the time to be impregnable is to be gathered from Orders of the Day, as e.g. No. 111, dated Sept. 18, 1918. Yet even in 1917 the Brit. forces began a drive on Nov. 20 towards Cambrai, which for a time threatened to plerce the H. L. and eyen to terminate the deadlock on the W. Front. (See also Bourlon Wood); CAMBRAI: FRANCE AND FLANDERS, FIRST WORLD WAR CAMPAIGN IN.) The H. L. was eventually smashed by the Brit. forces in Sept. 1918, following the successful piercing of the line at its strongest point, the Drocourt-Quéant (n.r.) Switch. Hinderwell, par. and fishing vil., N. Riding, Yorkshure, England, 9 m. N.W. of Whitby. There are iron mines. Pop. 2100.

2100

Hindhead, extensive hill ridge and common, rising 2 m. N.W. of Haslemere, Surrey, England. Gibbet Hill, the light est point, is 895 ft. To the E. of H. vil. lies the Devil's Punch Bowl. Inval and Weydown Commons lie S. of Gibbet Hill.
The greater part of this area of heath and
open wood was presented in 1906 by the Hindhead Preservation Committee. High-combe Copse on the W. side of the Punch Bowl was purchased in 1908 through the W. H. Robertson Memorial Fund, and 141 ac. of land in the Punch Bowl, known as

as the result of a public appeal.
Highcombe Bottom, were acquired in 1939
as the result of a public appeal.
Hindley, taship., 2 m. E.S.E. of Wigan,
Lancs., England, celebrated for cannel
coal. There are from works and cotton
mills. Pop. 18,900.

Hindmarsh, suburban post tn. on Torrens R., 2 m. N.W. of Adelaide, S. Australia. Pop. 12,000. Hindo, largest is. of the Lofoten group

off the coast of Norway, within the Arctic circle. It is mountainous and somewhat wooded. Digermulen to the S.W. is a port of the Vesteraalen steamers. Area 864 sq. m. Pop. 10 000.
Hindel, small trib. state, Orissa, India, 50 m. W.N.W. of Cuttack. Area 312 sq. m. Pop. 380,000.

Hindostan, see HINDUSTAN.

mausoleum at Tannenberg. His memoirs

Aus Meinem Leben (1920) show liberality
of thought and restraint. See life, 1935,
by Major Hindenburg, his nephew.

Hindenburg, see ZAREZE.

Hindenburg Line, otherwiss Siegfried
Line, name given to the line of field fortifleetions taken up by the Gar armies in

The close sellance and interestion between The close alliance and interaction between Brahmanism (q.v.) and H. make it impossible for a strict line of demarcation to be drawn from a chronological or a sec-tarian point of view. H. may be said to date roughly from about the sixth century, when the local revolts of the latty against Brahmanic supremacy culminated Brannahu supremacy cummacut in Buddhism and Jainism. Until then the authoritative doctrine of pantheistic belief formulated by speculative theologians during the centuries succeeding the Vedic period had held sway; these revolts had the effect of rendering Branchism and the effect of rendering Bra revoits had the effect of rendering Brahmanism still more tolerant, although its erstwhile severely metaphysical and ritualistic rigour had previously been modified by the currents of Sivaite and Vishnuite thought. The doctrine of the Trinurti, or Trinity, was often put forward under the influence of Upanishad monism. Brahma the creative principle ward under the influence of Upanishad monism. Brahma, the creative principle of the universe; Vishnu, the conservative principle; and Siva, the destroying, but also the generative, principle, are represented as a Trintv of equal and identical deitics. Early Brahmanism and Buddhism co-existed down to about A.D. 800 when the latter disappeared from the peninsula, leaving a new Brahmanism, the product of the two philosophiles. This modern H., based on the Puranas (see Purana) gives less prominence to Brahma than to his associates. Vishnu and Siya. than to his associates, Vishnu and Siva. To the vast majority of Hindus some form of either Vishnu or Siva is the highest source of all existence, and the object of supreme adoration. The subdivs. of the Vishnuite sects range from the broadest pantheism to extreme sectarianism. cult of Siva affects the two extremes of society; he is favoured by many high-class Brahmans and metaphysical ascetics, and also by the lowest classes. The reason for this is that he is regarded not only as a mystic miracle-working deity, but as a blood-loving, awe-inspiring god. The Sakla movement, the worship of Siva's wife, under various names, as the cosmic energy of the universe, is closely allied to Siva-worship. The whole ground of lindu sectarianism is by no means covered by those broad outlines; many miscellaneous cults exist which are still included under the general term H. The pantheon of the latter finds room for hosts of minor deities, which are in the main accepted both by Vishnuites and Sivaites. Closely allied and interwoven with all the crosery anied and interwoven with all the sects of H. is the system of caste. The infinite variety of caste-divs., each with a social and religious organisation of its own, was evolved from its beginnings in the the Vedic age by the Brahmans. For details, see under India. Although H. has Hinduism, comprehensive term which is preserved numberless myths, and has inused to designate not only the social customs, but the religious beliefs of the majority of the peoples of India. The actual truths from nature and the universe. Its main planks, the doctrines of 'Karma' (works). 'Samsāra' (wandering, i.e. (works), 'Samaara' (wandering, i.e. metempsychosis), and 'Moksha' (release and absorption, or union, with the Infinite) may seem fantastic to the European mind; but the Hindu mind is essentially mystic and transcendental, regarding all finite phenomena as avaneagent and absorption, or union, with the Infinite) may seem fantastic to the European
mid; but the Hindu mind is essentially
mystic and transcendental, regarding all
finite phenomena as evanescent and
illusory, and, if this is remembered, due
honour and praise will not be withheld
from its vast and beautiful religious
the chief passes are the Khawak, the
literature. In such works as the Upanthads, the Bhagavad-nta, the TamilSivante poems, the Ramāyana, and many
lower Shibar (9800 ft.), after which the

and its general direction is from W.S.W. to E.N.E. As the range turns away from Ab-i-Pania, an affluent of the Oxus, it attains greater elevation, rising sometimes



RINDUISM: THE TRIMURFI OR THREE-HEADED BUST A representation of Siva in the character of Brahma, the Creator, Rudra, the Destroyer, and Vishnu, the Preserver

others, the truth that the pure in heart, of whatover creed or race, shall see God is manifested. Dospite their faults they represent a notable progress of the human represent a notable progress of the human mind in spiritual and religious evolution 'They are but broken lights of Thee, and Thou, O Lord, art more than they,' and more than any other religious system See Sir M. Monier Williams, Hindusm, 1877 Sir M. Monier Williams, Hinduism, 1877 J. Robson, Hinduism and Christianiy, 1883; J. Murray Mitchell, Hinduism, Past and Present, 1897; L. D. Barnett, Hinduism, 1906 C. N. Eliot, Hinduism and Buddhism 1921; L. S. O'Malley, Popular Hinduism, 1935; N. Macnicol (ed.), Hindu Scriptures (Everyman's Library), 1938, J. Horbert, La Notion de la vie future dans l'Hindousme, 1945; A. C. Bouquet, Hinduism, 1919. See also Arya Samaj, Brahmanism, India, Siva, Vishing ofc.

range is merged into Koh-i-baba. H Schomberg, Between the Oxus and the Indus, 1935.

Hindu Law is theoretically of divine origin, and cannot be changed by human igency. The books which lay down the liw, the Shestras, are of very anct. origin, and the state of society in the time in which they were written was quito unlike that of the present time. Consequently, they exact takes which no sequently they enact tules which no Hindu follows, and do not give any pronouncement on many things which need regulation. The chief agents in changing the operation and scope of the law are custom and different interpretations, as a laid days in comparative. laid down in commentaries. Legislation has not been employed, although the Brit. parliament and the Hindu legislatures Bouquet, Hinduium, 1919. See also Ary Samaj. Brahmanism, India, Siva, Wishinu, etc.
Hindu-Kush, name of a mt. chain of Central Asia which, for 200 m from its E extremity, forms the S. frontier of extremity, forms the S. frontier of Afghanistan. It is the great watershed between the Kabul and the Oxus basins,

were binding were the writers of com-mentaries, but the Indian courts will not mentaries, but the Indian courts will not accept the opinions of modern commentators, although their own rulings are binding. Thus different schools of H. L. have arisen, which may be divided into two main branches, that of Benarcs (including those of Bombay, Dravida, and Mithila, for W. India, S. India, and Nepal, respectively), and that of Bengal, or Gavinja. The most important books laying down the law are: the Laws of Manu the Smitri of Yaghavalkya, and the Smitri of Naruda. More important still are the commentaries which are not sacred: the Milasshara of Vijnancsurva, on the Smitri of Yahgaralkya, is the commentary which exercises the most influence, though in the valley of the Ganges the Dayabhaga of Jimularahana, in S. India the Smitri Chandraka, in W. India the Vigharahara Mayukha, and in Mithila the Vigharahara Mayukha, and in Mithila

Hindus, Maurice Gerschon (b. 1891), Russo-Amer. author; a native of a Russian vil., who became a distinguished Amer. man of letters. He migrated to the United States in 1905 and graduated from Colgate Univ. in 1915. He has frequently congate Only in 1915. He has requently revisited Russis and returned there after the Civil war to see the progress of the collectivist experiment in agriculture, with which, indeed, he was in sympathy. An account of what happened in the course of the collectivisation of the farms will be doubt in the terms. will be found in his two very remarkable novels Broken Earth (1926) and Red Bread novels Broken Earth (1926) and Ited Bread (1931), in which latter he describes the collectivisation of his old vil. (see also Kulak). His other novels include: Humanity Uprooted (1929), The Great Offensive (1933), Moscow Skies (1936), and Sons and Fathers (1940). His non-fictional studies of Russia include The Russian Peasant and Revolution (1920), IVe Shall Live Agan (1939), and Mother Russia (1943). Green Worlds (1938) is an autobiography of his youth.

Russia (1943). Green Worlds (1938) is an autobiography of his youth.
Hindustan, or Hindostan, means the 'country of the Hindus.' The Persians used to call the R. Sindhu 'llindu.' and that part of the dist. was therefore called H. The region denoted was gradually extended, until the whole tract of country between the Himalaya Mts. and the Vindhya Mts., W. of Bengal, was so designated. At one time H. was often used as a name for the whole of India, but is now seldom used either with such extended.

used as a name for the whole of India, but is now seldom used either with such extended or the old very restricted meaning. Hindustani Language and Literature. H. is the name given by the Eng. to Uriu, an Indian dialect; but H. proper includes the many Indian dialects in existence in Hindusten, such as E. Hindi, W. Hindi, and Hajasthani. Muhammed Husain Azad

maintains that Urdu is derived from Brit Basha, a variation of W. Hindi, but it is almost certainly a sister dialect, both being descended from Saur Senic Prakrit. II. or Urdu, meaning 'camp language,' originally derived this name from being the language spoken by the soldiers camped near Delhi, which was the centre of Moslem rule. It is now spoken in the neighbourhood of Delhi and Meerut. Modern High Hindi was developed from Urdu, but for the many words of Persian origin words of Sanakrit origin have been substituted, Sanakrit really being the substituted, Sanskrit really being the original language, and in consequence the literary languages of Urdu and High Hindl have become widely different. Urdu was originally a simple language, sufficient to the needs of the peasants. It did not become a literary language until the sixteenth century, and under the influthe sixteenth century, and under the influence of their Mohammedan conquerors the Urdu application in Persian literature. The Urdu alphabet is practically identical with that of Persian and Arabic, and is written in Arabic characters. Urdu writers borrowed both form and imagery from Persian poetry, while their prose is also largely imitative of Persian prose. During the time of of Persian prose. During the time of Akbar (1556-1605) It was compulsory that all gov. clerks should know Persian, and from this date the Urdu language became more standardised. From the sixtenth century onwards European languages, chiefly Portugueso and Eng., have also influenced Urdu. In Urdu provody there is no accent as in king., but only vowel quantity. Rhymo (qaju) and double rhyme (radi) are greatly used. There are fifteen standard metres, while the prin. kinds of verse are ghazal, an ode; of quanta, a purpose poem; qua, a fragment of quanta or ghazal, but differing from them in rhyme and often used for didactio poetry; ruba; a quatraly iorn; mamari, double-rhymed, used for bullads, epica, and romances; mustcad, a poem in which a few words are added to each line beyond the length of the metre; murabba, rhyming hemistichs in sets of four · mukhammus, rhyming hemistichs in sets of five; musaddus in sets of six and others such as musabla in sets of seven. Wasokht, burning backwards, is a love poem in which the poet complains of the heedlessness of his beloved, and larikh is a chronogrammatic poem, while fard is a single verse used as a quotation. The earliest form of Urdu literature is poetry, and Amir Khusra is the first known poets, writing in the thirteenth century. The two most celebrated of Urdu poets—Raf. Sauda, the satirist, and Mir Taqi, the narrative poet and someter—lived in Delhi in the eighteenth century. There are such as musabba in sets of seven. Wasokht, in the eighteenth century. There are three kinds of Urdu prose: ari, naked and unadorned; murajjas, cadenced, using unadorned; murajjas, cadenced, using metre without rhymes; and musajja, in which rnyme is used without metre. There are also three kings of nasr musajja or rhymed prose. Early Urdu prose is marred by the frequency of its Jingling rhythms, and it was not until the nineteenth century under the influence of Ghalib and Sir Syed Ahmed Khan that it became free of rhymes and the long, com-ulicated Persian constructions. Fictions, as distinct from romances, together with journalism did not come into existence until the end of the nineteenth century, and then under Eng. influence, while Urdu drama is still in its infancy.

Hine, Reginald Leslie (1883-1919), Eng. lawyer and historian of Hitchin, b. at Newnham, Hertfordshire. A scholar of great ability and skill, and a writer and locturer of charming and gracefully allusive style, who devoted his gifts chiefly to the community limited would style. the comparatively limited world of local tn. and co. hist. Hitchin was H.'s special study, to which he gave himself intensively for many years. Reyond it, he had many wide interests: in the co. of Hertford-shire, on whose hist, he was engaged when shire, on whose hist, he was engaged when he died by suicide, and in Eng. hist, and traditions in many directions. His writings include: Lyra Celtica (1912), Dreams (1913), The History of Hitchin (2 vols. 1927-29), Samuel Lucas, Life and Art Work (1928), A Mirror for the Society of Friends, Being the Story of the Hitchin Quakers (1929), Hitchin Worthes (1932), The Natural Instory of the Hitchin Region (1934), Confessions of an uncommon

The Natural Indory of the Hutchin Region (1934), Comfessions of an uncommon attorney (1945), and Charles Lamb and his Herifordshire (1949).

Hinganghat (anct. Innycotta), tn. of Wardha dist., Central Provs., India, 48 m. N.S.W. 6. Yenour. It is the centre of the trade in Wardha valley, which is famous for raw cotton. Pop. about

Hingham, tn. of Plymouth co., Masanchusetts, U.S.A., on Massachusetts Bay, 12 m. S.E. of Boston. It is a manufacturing tn., has an arsonal, and is a popular summer resort. Here is the Derby

Academy.

Pop. 8000. Bert (1891-1933), Australian Hinkler, Bert (1894-1933), Australian airman, b. in Bundaherg, Queensland; he took to flying and came to Eugland in 1914. In 1928 he carried out a lone flight to Australia in 15 days, covering 10,000 miles. After disappearing on a cross-European flight, his body was found in Italy.

Hinkson, Mrs. Katharine Tynan, sec

Hinny, hybrid offspring of a stallion and a fomale ass. Compared with the mule, which is the cross between a male ass and a mare, it is more tractable and less obstinate: at the same time it is not so sturdy and is smaller in size. It is less common than a mule, because less useful. See also under MULE.

See also under MULE.

Hinojosa del Duque, th. 18 m. N.N.W.
of Cordova, Spain There are valuable
copper mines, and line and woollen goods
are manufactured. Pop. 10,600.

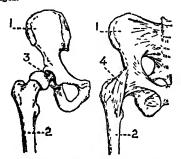
Hinsley, Arthur (1865-1943), Eng.
cardinal, b. at Carlton, near Selby, Yorkshire. Educated at Ushaw and passed
to the Eng. College at Rome. Took a
doctorate at the Gregorian Univ. and
returned to Ushaw as a prof., 1893. In
1889 he became headmaster of St. Bede's
Grammar School. Bradford. Transferred Grammar School, Bradford. Transferred in 1904 to the archdiocese of Westiniuster In 1917 as parish priest of Sutton Park. he was chosen to be Rector of the Eng. Col-

lege in Rome. Created bishop of Schastopolis in partibus, 1926. In 1928 he was appointed to the post of 'Apostolic Visitor to the African Missions in Brit. Territory' and secured the co-operation of the Rom. Catholic missions in schemes of educational reform in all parts of Brit.
Africa, being created, in 1930, Apostolic
Delevate in Africa and titular archibishon
of Sardes. He will be runembered as one of the more significant of those men who have influenced Africa for good, especially as he represented the Pope in the Fr. colonies as well as the Brit. In 1934, after colonies as well as the irrt. In 1934, atter a serious illness, he was crosted a canon of St. Peter's, but at the age of sixty-nine, was chosen to succeed Cardinal Bourne in the See of Westminster. Went to Rome in connection with the canonisation of the Eug. martyrs Thomas More and John Fisher. At the end of 1937 he was raused to the seared college with the title raused to the sacred college with the title of santa Susanna. Held strong views on the subject of the persecution of the church in Russia, Mexico and Spain, and, later, turned his powerful oratory against later, turned his powerful oratory against New paganism. After the fall of France in 1940 he founded a new society, 'The Sword of the Spirit,' for mobilising ('atholics to promote, as a religious duty, the victory of the allied arms, and the reconstruction of Europe. Had an engaging personality, which made him beloved by all who came in contact with him. Hintestand Ger would expressing the

Hinterland, Ger. word expressing the country which lies at the back of colonies which, in an unexplored continent, naturally grow up near the coast. It is connected with a theory of colonial expansion. Most early settlers, like those in N. America and in Africa, assume rights are much wider area than that which they have so far developed or explored. Thus those Eng. colonists who had peopled a mere coastal strip arrogently claimed unsidiction over vast regions W. of the Ut. sissippi, and were not slow to show their resentment at what they regarded as the injustines appropriations of Fr. explorers along that riv.'s course. The theory about the 'hinterland' made a very strong appeal to the Ger. emigrants of Bismarck's day.

Hiouen-thsang, see Hwen Phaned. Hip-joint, ball and socket joint (enarth-ross), somewhat resembling that of the -houlder but with considerably less extent on movement. The pelvis socket (acotabu-lan) is considerably deeper than is the case in the glenoid cavity of the shoulder joint. The investing membranes and tissues are also much less lax than those of the upper limb, and in consemonce the whole is considerably stronger. 'ine capsule has three well-marked investing bands: (1) The ligament of Bigelow, which is mainly concerned in the maintenance of the creet position of the hidy, is particularly strong and seldom riptures, even in cases of the dislocation of the joint. It is in the form of an inverted Y, in which the upper part is attached to the illum and the limbs of the Y are fastened to two distinct portions of the head of the femur. The other ligaments connect the femur with the pubis

and the ischium respectively. The ligamentum teres or round ligament passes from a slight fossa in the spherodial head of the femur to the interior of the acc-tabulum. This ligament, on account of tabulum. This ligament, on account of its situation, has been the subject of much discussion. It is absent in some mammals. Gripping the head of the femur is the cotyloid ligament, which lies inside the capsule and deepens the margin of the socket; it is continued as the transverse ligament. The synovial cavity extends along the neck of the femur beyond the limits of the auricular carti-



HIP JOINT, FRONT AND BACK VIEW Haunch bone;
 Femur;
 Round ligament;
 Capsular ligament.

Diseases.—The H. is peculiarly subject to many of the diseases which attack joints. Hip disease has been definitely associated with scrofula, and the symptoms of it usually appear before puberty. Failing satisfactory treatment the disease passes through well-marked stages, and anally dislocation may result from the breaking down of the surrounding tissues, which is frequently accompanied by a fungoid growth from the base of the acetabulum, which growth pushes the head of the femur from the socket; the whole may be rendered immovable (anchylosed), and although cases occur in which a permanent lateral displacement and shortening of the limb on the proof and shortening of the limb are the most serious consequents, yet more frequently the characteristic tubercular infection of the synovial membrane supervenes with dire results. Accidental dislocation is not frequent, largely due to the depth of the cavity and the general strungth of the joints. In adults such dislocation is often joints. In addite such discovering the order accompanied by a fracture of the lead of the femur; its rarity of occurrence is partly neutralised by the nuch greater difficulty which is experienced in reducing this dislocation. Congenital dislocation. this dislocation. Congenial association, which may be double, may be caused by the position of the child during intrauterine life. The dislocation may not be discovered until walking commences, when the peculiar rolling gait will hint at tt. X-ray examination is necessary in order to discover whether a hollow exists

in which the head of the femur may be placed, otherwise the treatment is much more difficult and may even demand much more difficult and may even demand the artificial construction of a socket. Rheumatoid arthritis often makes its appearance at the H. which, in certain cases, it renders totally inoperative. Hipparchus, see HARMODIUS. Hipparchus (c. 160–120 n.c.), founder of scientific astronomy, b. at Nicrea (in Bithynia), and lived in Rhodes and Alexandria. His greatest discovery was that of the precession of the conjunction

that of the precession of the equinoxes, but he also investigated the true periods of the revolution of the moon and of the of the revolution of the moon and of the solar year, and showed how places might be more accurately located on the globe with reference to the lat. and long, of stars. To H. also are traceable the beginnings of trigonometry, both plane and spherical. It is only recently that the true greatness of H. has been appreciated, as Ptolemy had for centuries the credit of his predecessor's observations.

See H. Berger, Die geographischen Frag-menie des Hipparchs, 1870. Hipparlon (Gk. im-apo., a pony), name of a genus of extinct fossil ungulate mammals belonging to the sub-order Perisso-dactyla and the family Equide, and found dacty la and the family Equidic, and found in the Upper Miocene and Pilocene strata of Europe, N. America, and Asia. This animal is usually regarded as one of the ancestors of the horse, though differing considerably in structure and size. The li has three toos, the outer digits not reaching the ground, the ulna being better developed than in the horse, and its last return less than the formal than the property of the strategy of the strategy of the size of size is rather less than that of a donkey.

Hipper, von (1863-1932), Ger. admiral. At the outbreak of the First World War he was in command of the 2nd squadron of ne was in command of the 2nd squadron of the Ger. High Sea Fleet. At the battle of the Dogger Bank (q.r.) in Jan 1915 he commanded the Ger raiding cruisor squad-rons. At the battle of Juliand (q.r.) in May 1916 he was in the Latzor as Chief of the Reconnaissance Force, an appointment of great responsibility, which he ably filled. Heaucreeded von Scheer as commander-inchief of the Ger. Fleet in Aug 1918, and it fell to him to make the arrangements with the Brit. naval authorities regarding the surrender of the Ger. Fleet. He re-ceived the freedom of Wilhelmshaven for his Jutland services. See life by H. von Waldeyer Hartz (trans. by F. A. Holt), 1933.

Hipperholme, par and tn., W. Riding, Yorkshire, England, 2 in. N.E. of Halifax.

Quarries and tanneries. Pop. 5300. Hippias of Elis, Gk. sophist, contemporary with Socrates, who taught in Athens and figures in the *Hippias Major* of Plato as a man puffed up with his own concent. In learning he was a pedant; in literature a dilettante who tried his hand at every form of composition. Once at the Olympic games he boasted he had

at the Olympic games he boasted he had made all his apparel and was master of every mechanical as well as liberal art.
Hippius, Zinaida Nicolayevna, (1869–1945), Russian authores: b. at Roley, Tula prov. Married, 1889, Dmitry Merezhkovsky (q.v.), and belongs to his 'symbolist' school of poetry—fashionable

in their youth. Works:—three vols. of poetry; five of short stories; novels (e.g. New People and The Devil's Doil); essays; La Révolution et la violence—la vrate force du Tsarisme (in collaboration with D. S. Merezhkovsky and D. Filosofov, 1907) one play, The Green Ring (Eng. trans., 1920); and My Journal under the Terror (i.e. in Leningrad after the fall of Tsarism — Fr. trans. 1921). Works :-- three vols. of -Fr. trans. 1921).

Hippocampus, name of a genus of teleostean fishes belonging to the family Syngnathide and commonly called sea-

horses.

Hippocras, or Vinum Hippocraticum. old aromatic medicinal wine, prepared from spices, such as cinnamon, ginger,

lemon peel and almonds mixed with white wine and sweetened with sugar or honey. Hippocratea, chief genus of the order Hippocrateaceee, and was named after Hippocrates, despite the fact that the species have no medical value. The species are twining shrubs indigenous to the tropics.

Hippocrates (c. 460-c. 357 B.C.), celebrated Gk. physician, a native of the is, of As a youth he is said to have studied the tablets in the temples of the gods, where each person had inscribed the allments from which he suffered and the means by which he had recovered. beginning of the Peloponnesian war he is said to have seven athens from a dreadful pestilence. Subsequently, on being invited to the court of Artaxerxes, he patriotically refused and said that he must servo his own country. He was given the civic privileges of Athens, and rewarded with the golden crown. He travelled widely throughout Greece, and died at Larissa in Thessaly. His two sons, Thessalus and Dracon, and his son-in-law, Polybus, all followed the same profession. He was a careful and observant thysician, and a strong believer in surgery. The presence of disease, he believed, was due to a wrong proportion in the body of the humours, which he classified as phlegm, blood, and black and yellow bile. The chief works attributed to him are: Aphorisms, Promostics, and About, Air, Water and Places. The best known edsare: Fossius (Geneva, folio, 1657); E. Littré (10 vols., 1839-61), with Fr. trans.; Ermerius, 1859-63 (with Lat. traus.), and the Eng. trans. of Adems. 1819. and He was a careful and observant physician, the Eng. truns. of Adams, 1849, and W. H. S. Jones, 1923. See also F. Jevons, History of Greek Legrature, 1886.

Hippoorene, see Hvilcon,
Hippoorene, see Hvilcon,
Hippodamia, wife of Polops (q.v.).
Hippodrome (Gk. iπποδρίμος from iππο,
horse, and δρόμος, racecourse), course
used by the anct. tike. for chariot or horse
racing. It was much wider than the Rom. circus, and was usually made on the slope circus, and was usually made on the slope of a hill. Its length varied from 650 to 750 ft., and it was about 450 ft. wide. In shape it was oblong with one semicircular end, and the right side was somewhat longer than the left. Homer gives a fine description of a chariot-race, and shows that the critical point of the race was to turn the goal as sharply as possible, with the nave of the near wheel almost grazing it and to de this early. it, and to do this safely.

Hippodrome, London, place of amuse-ment which was opened at the beginning ment which was opened at the beginning of 1900. It affords a good entertainment, which is a combination of that given at a music hall, circus, and hippodrome. A feature of past performances was an aquatic display, for which the building is specially adapted. The arena can be filled with water to a depth of \$ ft., and has a capacity of about 98,000 gallons. In recent years only review have been In recent years only revues have been produced.

Hippogriff, or Hippogryph, fabulous animal, unknown to anct writers, represented in comparatively modern literature as a winged horse with the head of a griffin, and described as the horse of the Muses. It was used by Arlosto in his Orlando Funoso, and by many writers of

the Renaissance.

the Kensiasance.

Hippolyte, in anct. Gk. legend, the queen of the Amacons. She was the daughter of Ares and Otrora, and the sister of Antiope and Melanippe. She headed a troop of Amazons in pursuit of Antiope, but was defeated and fied to Megara, where she died of shame and grief According to another version. Megora, where she died of shame and grief. According to another version, after her defeat she became the wife of Theseus. Still another tradition recounts the still another tradition recounts. that Theseus slew her in order to become possessed of her girdle, the gift of Area.

presented of ner girdle, the gift of Area, Hippolytus, in anct. mythology, the son of Theseus, by Hippolyte or Antiope. His step-mother, Phædra, fell in love with him, and, on his refusing to gratify her desires, complained to Theseus that he had made attempts on her honour. His father thereupon cursed him and besought Possidary and to being alout his destruction. l'oseidon's aid to bring about his destruc-tion. While H. was riding in his chariot by the sea-shore, Posledon sent from the water a sea-bull which frightened the borses, so that the charlot was overturned and H.'s body dragged along the ground till he died. According to Virgil, Artomis persuaded Æsculapius to restore him to life, and placed him under the care of Egerla in the grove of Arica in Latium. He is the hero of Euripides' play of that

namo. Hippolytus (c. A.D. 160-236), an early Christian writer, supposed to have been Christian writer, supposed to have been bern in the East and to have become a disciple of Ireneus. Very little is known about his life. He became a presbyter of the church at Rome in the time of Bishop Zephyrinus (193-217). Ye disagreed with the succeeding bishop, Calixtus I., with the result that there was a schism, when apparently H. became the head of a separate church and styled himself Bishop of Rome. In 235, during the nersecutions of Rome. In 235, during the persecutions of Maximinus, the Thracian, he was exiled to Sardinia, where he died in the following to Sardinia, where he died in the following year. Origen ascribed to bim the Philosophumena, with which has been identified a fourteenth century MS., found in 1842 and published in 1851. His works have been collected by Fabricius (1716–18) and Lagarde (1858). See studies by C. O. J. Bunson, 1852; C. Wordsworth, 1852; J. Dollinger, 1853; H. Achells, 1897; A. d'Ales, 1906; and A. Donini, 1925.

Hippomane Manganilla, manchinesitree, a genus and species of Euphorbiaces

which frequents Central America Columbia, and the W Indica It is a tali, handsome tree contuining a most venome our milks latex and is among the most poisonous of all known vegetable productions

Hippomenes, son of Megarous, won the Bu of in Atalanta by fraud | The swift footed maid u promised to marry the sultor who should outrun her H had three golden apples dropped in her path,

three goilen appies arappe in her poor, which she stopped to pick up thus I sing the race See Aratura

Hippona (ff sixth century Au) Chlamble poet of Piphens. He was bin wheel from his native city by the tyrant Athenagor is in the and spent his exile in Clayomenee He was regarded as the inventor of a limping metro, called the choliambus or season in which a sponder is substituted for the thal lamb of an ambio senarius. His poems are satirical and not infrequently coarse see frag-ments collected in F Bergk Poetw Tyrica Grace and E Dichl Anthologia Tyrica Gracea, vol 1, 1936

Hippopotamus (6k for river horse) the sole member of a family of artiodactyle ungulate mammus 1 liv it is found only in Africa but fossils of a larger broad of hippopotami have been found in Eng land the rest of Europe and in India etc



The (() mon species, H amphibus in habits iv in ill parts of Africa but the smaller It liverans, is restricted to the W of that continent In suc a H is only a little infrior to the elej hant its legs a little infinite the enclosure was restart very tunted so that it belly touches the groun i when it walks on mud or other yielding sufaces, there is often as much as 2 in of skin on the back and flauks, but no hair covers its dark brown hide, its small eyes are set high in the higgs, un gainly head with its great anout and

enormous rounded murzle, the tail is quite short, and on each foot there are and boofed toes The animal is aquatic nocturnal and voracious a good swimmer and diver and as it-respiration is low, it can stay a long while under water. By day it is sleep, and linder water by usy it is stop; some languid, but by night it often comes out of the water to graze on the banks or if it lives in a cultivated region, it will make substantial into ids into ci ps and cause great destruction. It is t is bad habit which recounts for its disappearance from with the following the test at the carrier than the firth plains of the lower Nile. It is a garnous by nature in usually playful and good tempeted out persistent pursuit often provokes a dangeious pission. When angried the emits a loud and piereing with how there it was the carrier to the control of the carrier to the c noise which has been likened to the grating sound of a creaking door llunters thase it in a variety of ways, sometimes it is enspaced in pits, sometimes it is shot a reasonated in pits, sometimes it is shot a proposed, or pictred with spears from a cuno. The teeth are valuable as ivery the tongue, the fit and the jelly from the feet are favourite articles of diet, whiist the hides find many markets.

Hippurio Acid or Benzoyl-glycecoll ((H4NHCOC,H4 (OOH) colourless crystalline substance mcling at 18° C it is soluble in bot, but scar cly soluble in the soluble in bot, but scare the soluble in cold water to occurs in the urine of herbivorous animals from which it may contained by evaporation. It is best prepared by the action of being or it con give coll or of chloracter acid on benzamid. On boiling with dulte acids if A is by iroly sed to benze acid and givened.

glycocoll

giveocoli Hirado, or Firando, is of Japan in the strait of Kore, lying to the Woof Kiushiu from which it is parted by the Spea Straits. It is noted for its beautiful blue and white porcelains (Hiradous ki), and itso because the missionner, St. Francis Navier works where and the Dutch once had a pradict cents (1609-40). It use I it as a trading centre (1609-40)

His it is a training tenth (1909-20) it sip in long and 6 in broid
Hiranyagarbha, Hindu name for the freitor or kirst Born which may be rendered into king as Golden Linbryo' or 6 Iden Child—10 him is addressed an expusite hymn of the hij Feda Sumhita, which is an authology of sicted songs composition of the properties of the propertie which is an authology of sicild songs com

rent the goods to be me the property
of the hirer if he pays the whole of the
metalments By the terms of some agreements the so called 'hirer is bound to
pay for and purchase the furniture, which is therefore his property ab unitu, subject to the obligation to pay on easy terms. But usually Hs are so drawn as to reserve the property in the goods in the vendor until all the instalments have been paid, the hiror, properly so called, being under no obligation to purchase. The disadvantage to the hiror in this latter form of II. is that if he does not keep up his instalments, or exercise his option to purchase, the vendor is entitled to selze the goods and keep the whole of the pavments already made to him. Most firms who sell goods on 'easy terms' have printed forms of Hs., and it is essential theroughly to master the details of the agreement before signing it, so as to avoid hability in the event of inability to keep up instalments. Abuses of the system long excited complaints, and in 1938 an Act was passed giving the birer protection. from unreasonable demands and conditions, and allowing for the termination of an agreement by roturn of the goods hired after a specified number of instalments has been paid. The Hiro Purchase Act, 1938, applies to all Hs. and credit-sile agreements under which the hiro-purchase price or total price, as the case may be, does not exceed (a) for a motor vehicle or railway wagon, £50; (b) in the case of livestock, £500; (c) in any other case, £100. Before any agreement is entered tioo. Before any agreement is entered into, the owner must state in writing (otherwise than in the note or menio of agreement) a price (the 'cash price') at which the goods may be purchased by the horizontal buyer for cash; but this reprospective buyer for cash; but this requirement is an lantly compiled with if the liner has already mapected the goods and also if they were labelled with the price or he has selected the goods from a proced and also if they were labelled with the price or he has selected the goods from a priced catalogue. An owner cannot enforce a H. or any contract of guarantee iciating to it or any right to recover the goods from the hirer, and no security given by the hirer or by a guarantor for him will be enforceable against the hirer or guarantor unless the requirement as to stating the price has been complied with; and also unless a note or menio of the agreement is made and signed by the hirer and by all other parties to the agreement; and the note or memo must contain a statement of the hire-purchase price and of the cash-price and of the amount of each of the instalments and of the date on which each instalment is payable, and it must contain a list of the goods to which the agreement relates sufficient to identify them. A copy of the note or memo must be delivered or sent to the hirer within seven days of the making of the agreement. The Court, however, has a discretionary power to dispense with some of these requirements if the hier has not been projudiced by the failure of the owner to comply with them. There are analogous provisious on the statutory requirements relating to credit-side agreements where the total purchase price exceeds 25. A third ran, at any time before the final payment under a II. falls due, determine the agreement by notice in writing to any porson entitled or authorised to receive the sums payable under the agreement. He will be liable, without prejudice to any liability which has accrued before the termination, to pay the amount, if any, by which one-half of the hire-purchase of a thriving commerce, though with price exceeds the total of the sums paid comply with them. There are analogous

and the sums due in respect of the hirepurchase price immediately before the termination, or such less amount as may be specified in the agreement. Where the hirer, having determined the agreement, wrongfully retains possession of the goods, then, in any action by the owner to recover them, the Court may order the goods to be delivered to him without giving the hirer an option to pay without giving the inter an option to pay the value of the goods. Knowingly selling or pledging goods not completely paid for under a fl. which does not vest the property in the hirer ab initio may render the hirer liable to prosecution for latteny as a ballee. A H. under which the goods remain the property of the vender till full payment is not a bill of sile within the meaning of the Bills of sale Acts and therefore the goods not being within the hirer's 'apparent being within the hirer's 'apparent possession,' may not be selzed in execution possession, may not be selzed in execution (q.e.) by the hirer's creditors, and they cannot, generally speaking, be distrained upon for rent owing in respect of the premises in which they may happen to be. The hience to selze frequently inserted in such H. As, merely combles the vendor to retake what is his own property in the cvent of non-payment. The goods of a bankmunt trader delivered under a true bankrupt trader delivered under a true H or hire-purchase agreement vest in his trustee in bankruptev and form part of the assets available for his creditors generally, unless there is a well-recognised custom in the bankrupt's trade to hire goods of the kind comprised in the H. A if r quires a 6d. stamp, and it under seal (see DEED), a 10s. stamp.

Hirolito (b. 1901), Emperor of Japan, puring the title Dai Vippon Telkoku Jenno, or Imperial Son of Heaven of Great Japan. Descended from a dynasty that is believed to go back to the middle of the seventh century B.C. Educated partly in England; succeeded his father vehibito in 1926. Married Princoss Agrako in 1924. Akilhto, lis eldest son, a Crown Prince. Held the Brit, honours is from Frince. Head the Brit. Bonours & G., G.D., and G.C.V.O. After the defeat and surrender of Japan in the Second World War, a new draft con-stitution (Aug. 1946) profoundly changed the status of the Jap. Emperor. The constitution rests on the foundations of the state not, as theretofore, upon divine mandate, but upon the will of the elec-torito: and it restricts the functions of the Emperor, who becomes a symbol of the State

Hirosaki, tn. in the N. of Hondo, Japan: famous for its apple and lacquered ware. V luable manganese mines in the vicinity

inseparably associated with the 'Island of concrete buildings at H. were of unusually Light,' Miyajima, which rises from the strong design, intended to resist earthpicturesque bay opposite. This is, of quake. These, even when virtually woods and crags is famous for the great under the explosion, usually suffered no Light, Miyajima, which rises from the ploturesque bay opposite. This is. of woods and crags is famous for the great woods and crags is famous for the great temple of the goddess Bentin (begun in 587), which is accounted one of the three wonders of Japan, and was yearly thronged by a multitude of pligrius. The name of this ill-starred city, however, will go down to hist, as that of the first victim of the terrible atomic bomb. On Aug. 6, 1945, shortly after 8 A.M., an Amer. Super-Fortress flying at 30,000 ft. dropped a single atomic bomb over the city and the bomb exploded over the city centre. The city centre, once the Cold Tn., was dominated by a number of reinforced concrete buildings owned by banks, insurance companies, department stores, newspapers, and similar mercantile enterprises. Beyond the Old Tn. lay an industrial zone developed during the early part of this century, and consisting of many small wooden workshops set among dense Jap. houses. A few larger plants devoted to engineering and silk manufacture lay on the S. and W. outskirts of the city. The city was a prosperous trading community having some contacts with the outside world, and its centre was spadously planned, with tine streets and temples. Like other Jap. cities. It was temples. Like other Jap. cities, H. was growing rapidly before the war; its census pop. rose from 270,000 in 1970 to 315,000 in 1940. It remained at this figure for the greater part of the war, but began to fall in 1914, and at the time of the attack it was below 245,000. This fall was the result of evacuation, in the main compulsory and accompanied by the systematic destruction of houses to form fire breaksa programme to which impetus had been a programme to which impetus had been given by the great incendiary raids on Tokyo and other Jap. cities in the second week of March 1945, and the process was only partly completed in H. when the atomic bomb fell. The result of the explosion of the bomb was catastrophic and it was soon followed by the dropping of a second atomic bomb on Nagasaki and the conding of the programme and the conding of the programme. ending of the war, towards which the two bombs largely contributed. In H. the bomb exploded above a level expanse of bomb exploded above a level expanse or more than 10 sq. m. of wooden houses, destroying over 4 sq. m. first by blast and then by fire. The strong reinforced concrete buildings which dominated the centre of the city usually resisted the blast, but were burnt out. The modern industrial zone outside the city, at 1 i m. and more from the centre of damage, was beyond the range of severe blast. It is beyond the range of severe blast. It is officially estimated that approximately 80,000 persons were killed. The severity of the disaster (as also at Nagusaki) was increased by a panic flight of pop., in which even fire and rescue services were abandoned and which brought carnward. which even fire and rescue services were abandoned, and which brought communal life virtually to a standstill. The mere clearance of debris and the cremation of the dead trapped in it had to wait a month for the return of the pop. Most striking of the blast affects was the distortion of all types of building as a whole, leaving them leaning as if after a high wind rather than an explosion. Many of the reinforced

serious atructural damage except some depression of the flat roof, sometimes to saucer shape. As might have been expected from a bomb exploded at such a height, the effect on underground services was insignificant. Similarly, roads and railway tracks were unaffected. Bridge-were displaced but usually by very small amounts. For a fraction of a second there was an intense flash from the bomb, the radiated heat from which seerched objects flercely and to great distances. Among the resulting effects were the roughening of polished granite and other stones, the raising of bubbles on roof tiles, the red-dening of concrete, the darkening of asphalt road surfaces which retained the shadows' of passers-by at the instant of the explosion, and the scoreling of painted and unpainted timbers, of fabrics, and of the human skiu. Pregnant women who survived within 1000 yards of the centre of damage had miscarriages; those who survived up to 11 m. from the centre had survived up to 1t in. From the centre had miscarriages or premature infants who soon died. Even substantial buildings were penetrated by the gamma rays from the explosion and gave no protection. The ray had the effect of passing through the skin without seeming at its; to affect it. It is thought that the gamma rays caused the death of nearly everyone who was fully exposed to them up to a distance of half a m. from the centre of danger. Pople who were directly under the explosion in the open had their exposed skin burnt so severely that it was immediately churred dark brown or black: those people died within mms. or at most Both in H. and in Nagasaki, burns on exposed skin wore very severe up to about 1500 yds, from the centre of damage. Buildings and walls gave complete protection from flashbura. There was strong evidence that heat radiation was a cause of hires in unscreened buildings, probably up to a distance of a m. from the centre of damage. A number of the centre of damage A number of reinforced concrete buildings with shuttered windows escaped fire, apparently because the heat radiation, travelling at the speed of light, arrived and died away the speed of light, arrived and died away before the blast, travelling only at a few thousand ft. a see. blew out the shutters to expose the interior. See The Lifted of the Atomic Bombs at Himoshima and Nagasaki: Report of the British Mission to Japan, H.M.S. O., 1946, and J. Hershey, Hiroshima, 1946. By 1948 H. was to some extent rebuilt. Plans exist, on paper, for making the city a permanent centre of culture and peace. There are to be wide roads, pages and tree-lined boulevarts: making the city a permanent centre of culture and peace. There are to be wide roads, parks and tree-lined boulevards; hotels in the W. style are to be built for foreign tourists, and it is hoped also to build a casino on one of the nearby is. Whether these schemes will ever come to anything is in some doubt, for there is a great lack of building materials and there are virtually no funds, and up to late 1945 the Jap. Gov. had granted only 60 million yen for the work of reconstruction. The

immediate tasks then were road repairing, waterworks construction, and school rebuilding.

Hirozhige (Ando Tokitaro) (1797–1858). ap. landscape painter. True name Jap. landscape painter. True name Ando Tokitaro, he adopted the name of H. conformably to convention in recognition of his being a pupil of Toyohiro. H. was one of the chief members of the Uktoyo-ye or Popular School of Painting in Japan or Popular School of Painting in Japan (see also Hokusai) a school which was especially occupied in making colour prints. H. and his pupils (two of whom adopted the name of H.) applied the process of colour block printing for land-scapes with a skill and harmony of effect that have only been equalled in Japan by Hokusai and certainly by no W. artist. Most of the subjects of H. and his pupils were taken from the vicinity of Yedo or were scenes on the old highway between Tokaido and Kioto.

Hirpine, one of the hardy tribes be-longing to the country of Sammium, E. of Naples, Italy. In 4 s.c. they joined the Samnite alliance; their chief tn. was

Æculanum.

Hirsch, Maurice, Baron de (1831–96),

the state of the stat Jewish philanthropist, was by birth a Ger. As partner in the banking house of Bischoft-heim and Goldschmidt, of Brussels, London, and Paris, he amassed a huge fortune. He founded the Jewish Colonisation Association, and endowed it with a cap, of £9.0 0.0 whe object of which was to give his persecuted co-religionists of Russia facilities of emigration.

of Russia facilities of einigration.
Hirschberg, (Polish, Jelenia Cora), tn.
1120 ft above the sca-level, 48 m. S. E. of
Görlitz (Zgorzelec) in Silesia, Poland,
formerly Prussia. Situated at the meeting of the Boher and Zacken rivs., it is
especially noted for its beautiful surroundings. Pop. 30,900.

History to on R. Olse dept. Airno.

roundings. 1701. 30,900.

Hirson, tn. on R. Oise, dept. Aisne,
France. There are nail and glass works
and foundries; basket making is carried
on. Here on Sept. 2-3, 1911, the VII
Corps of Gen. Hodges's First Amer. Army crossed the Belgian border in a rapid ad-

wance of 40 m. in 2 days. Pop. 10,100. Hirtius, Aulus (c. 90-43 s.c.), Rom. historian, was a friend of Cicero and Casur, and the reputed author of the eighth book of the Gallic wars. The narratives of both the Alexandrian and Sp. campaigns are also usually attributed to him. The colleague of Pansa in the consulate of 13, he was slain in the battle of Mutina, though it was Antony his enoug, who met defeat.

His Majesty's Theatre, Haymarket, was designed originally by Sir John Vanbrugh, and was opened as 'the Queen's in 1705. In 1789 it was burnt down, and a second theatre erected which lasted from a second theatre erected which lasted from 1791 to 1867, when it, too, was utterly large and its varieties; bone or osseous ing, which became known as the 'Italian Opera House,' that Madame Hachel appeared in 1841, and here Jenny Lind made her debut. The third theatre dates from 1872 to 1892. It was put to various irevival meetings, and it was also the scene of promenade concerts, Wagner's operas performed by the Carl Rosa Com-

pany, and Fr. plays with Sarah Bernhardt in the cast. Coquelin aint here played Cyrano de Bergerac in Rostand's play of that name. The fourth theatre was opened in 1897 with Sir Herbert Beerbohm Tree as proprietor and manager. Under his direction many representations of Shakespeare's plays were staged; while excellent performances of other dramatic works were given, including Stephen Phillips, Herod and Ulysses, and the Japanese play, The Darling of the liods. Joseph and His Brethren appeared in 1913, David Copperfield, and Shaw's Pygmalion with Mrs. Patrick Campbell and Tree, in 1914. The most remarkable run was made both during and after the run was made both during and after the 1914-18 war by Chu-Chin-Chow (1916-1921), with Lily Brayton and Oscar Asche In the leading parts Other Eastern plays, such as Cairo, East of Suez, and Hassan, each ran for nearly a year. Beau Ceste and Mozart with Sacha Guitry and Yvonno Printemps as leading performers, were notable theatrical events of 1929. Another long theatrical run was recorded by Noel Coward's operette Bitter Sweet, 1929-1931. Later successes are The Good Com-panions (1931); Conversation Fiece (1934), with Yvonne Printemps; Balalaika (1937), the Lilac Domino (1944) and Brigadoon (1919).

Hispaniola, see HAITI.

Hissar (1), cap. of the dist. of H. in the Bokhara Region of the Ozbek S.S.R., Central Asia. It guards the approach to Bokhara Region of the UZDOK S.S.K., Central Asia. It guards the approach to the fertilic valleys of the Kafirnihan and Surkhan. Pop. 10,000. (2) The name of a dist. and the in the Ambala div. of the E. Punjab, India. The dist. (5217 sq. m.), which is fed by three railways is partly irricated by the W. Junna Canal. Sandy the the most neft, but in rainy years profor the most part, but in rainy years produces good crops of barley, rice, etc. chuning and cotton-weaving are carried on in Hansi and Sisra, besides H. Founded n 1356 by the Emperor Feroz Shah. Pop (dist.) 820,000 (tn.) 25,000.

Hissar, Aflorim Kara, see AFIUM KARA HISSAR.

Histology, that branch of microscopic anatomy which deals with the intimate structure of the textures. A differentiation of functions in the higher animals has led to the development of a large number or organs, each composed of various tis-ques and textures. The result of minute dissociations and microscopic analyses proves that the actual number of elementary tissues, which are distinct in origin and structure, is small, though transition forms are encountered. The general forms are encountered. The general enumeration is as follows: epithelium, or epithelial tissue; connective tissue (many varieties, including adipose tissue); carti-lage and its varieties; bone or osseous

Examples of these are: blood | and lymphatic vessels; lymphatic and secreting glands; serous, synovial, and mucous membranes; and interument— all of which are described in detail elsewhere.

Histon, vil. in Cambridgeshire, England, 4 m. from Cambridge. Noted for jam making. Pop. 1600.

Historical Manuscripts Commission, The, Historical Manuscripts Commission, The, royal commission which began to sit in 1809. Sir Thomas Duffus Hardy (1804–1878) was influential in obtaining its appointment, as he felt keenly the desirability of some systematic investigation into the collections of valuable MSS, which at present are dispersed up and down the country in the libraries of colleges, corporations, and private Individuals. Under the auspices of this commission many records and appendices colleges, corporations, and private nun-ridusis. Under the auspices of this con-mission many records and appendices have been issued, twelve of which deal with the sixteenth-century MSS. in the possession of Lord Salisbury at Hatfield House. This research is valuable in giving to students what, would otherwise lie hidden for all time or, as has often happened, find a foreign purchaser. Similar bodies have been founded abroad since the appointment of the H.M.C.

Complementary to the work of this Commission is that of the Brit. Records Association, which is especially concerned with the principles to be followed in deciding whether to keep or destroy modern records. A very large proportion of the historical documents preserved in this country are or have been records or archives, i.e., documents accumulated in the course of organised business, social activity, or domestic affairs, by a natural process of growth, or in other words not consciously collected, and it is this natural process of growth that gives such docu-ments their value as evidence of contem-porary facts. It is said that survivals of accumulations of this kind are more numerous in England than in any other country. Such are, e.g., co. sessions record, and the like. It is obvious that through ignorance there is some danger of the destruction or disacasions persal of these records or archives, a danger supplemented by their increasing value in the sale room. The generally accepted classification of Eng. archives divides them into public, central and local; semi-public; private; and eccles. The control of these archives has, however, never been centralised in England as it has in most of the greater European countries. The Public Record Office brought together, or arranged to bring together, under one authority the archives of nearly all divs. and depts, of central gov.; but it estab, no relation between this authority and the local, private and this authority and the local, private and eccles, custodians or owners. Nor, generally speaking, has any Act estab, any inter-relations between these other authorities and individuals. The State has in fact intervened sporadically in regard to all the above classified externite of The present Royal Commission on Historical Monuments was set up in 1908 and has been at work ever since; but in its first report (1910) it directed attention to the necessity for an executive authority, and this was set up by logislation in 1913 in the shape of an inspectorate forming part of the Office of Works. See Proceedings of the British Records Association.

Historiographer, writer of history. The title has sometimes been given as a mark of honour by European courts to various learned historians. Thus Racine was H. to Louis XV. Voltaire to Louis XV. The post of King's H. in Scotland was revived in the eighteenth century and still

exists.

History, term briefly defined as the story of the past. The meaning of the Gk. word igroun, from which it is derived, is that which we come to know as the result of an enquiry.' H is not therefore to be limited to a simple record of what is known or believed to have occurred. H, is more properly concerned to examine, analyse, and explain past events, parti-cularly in human affairs, and in the words of R. G. Collingwood 'to tell man what man is by telling him what man has done.'
The oral traditions of primitive peoples which are obscured by mists of legend and of miracle are not so much H. as the sources of H. The written records of more advanced peoples may similarly be but the materials of H. The anot. Egyptians, the Assyrians, and the Chinese possessed catensive records, but they were not er analysed or explained or assimilated into u connected narrative; records they remain. connected narrative; records they remain, it is with the Gks, of the fifth contury n.c. that H. begins. They developed a reasoned approach to the past, combined with an ability to analyse the causes, examine the effects, and from the result build up an account of past events. Herodotus gave his work the title of 'a histfuy,' meaning an investigation or enquiry. It is the use of this word and its insulation to the literature of the words. tion or enquiry. It is the use of this word and its implications that makes Herodotus the father of H. He not only recounted the conflict between Greece and Persia but set out his interpretation of that conflict as a struggle between oriental autocracy and hellenistic constitutionalism. Similarly, Thucydides in his history of the Pelopon-nesian war not only described the course of the war but gave an account of the underlying causes.

lying causes.

Since therefore H. is concerned to analyse and explain as well as to describe the events of the past, it is impossible for it not to be coloured by the personality and mind of the historian. Again, only the carliest historians could attempt to record and discuss all the events of which they had knowledge. A later historian must necessarily select those events which he regards as memorable, and the selection which he makes must be a matter of personal judgment. The most clear-sighted historian will make allowance for his personal projudices in thes and individuals. The state has in the most clear-signed instorian with make fact intervened sporadically in regard to allowance for his personal projudices in all the above classified categories of archives, but such intervention in other the first to admit that H. cannot be ensents, has been wider and more definite. Values which the historian applies to his

study of the past is determined by the general social, philosophical, religious, and economic ideas of his age, either because he is in accord with the predominant thought of his time or because he is in revolt against it. Thus, the history of the Jewish people in the books of the O.T. became primarily an account of the way of God with the world, while to the Marxist historian the stery of the growth of human thought and behaviour is primarily the story of the influence and effect upon man of his economic environment. H. needs to be, as indeed it is, re-written from time to time and past events revalued in the light of fresh developments and new ideas. In addition, advances in other branches of knowledge bring to the historian new means of discovering the facts of the past and suggest to him new methods of handling his sources. The modern historian of anct. Britain has, for instance, been assisted in his knowledge of his subject by the field-work of the archaeologists and, more recently still, by the development of acrial photography, radiography, and pollen-analysis which have brought to light new facts about anct. settlements. In the nincteenth century the progress of the physical sciences and the development of the scientific method prompted the instorian to use new and more critical methods of handling and classifying his in rial. Lastly, mention may be made of the influence on the historian of the general educational and social standards of the civilication in which he lives. He is influenced in the writes. In a society in which all classes are literate, the historian is likely to be influenced in the presentation of his material by the wide range of his potontial readers.

For the modern European world the Gk. and Rom. historians stand as the great originals. Herodotus and Thueydides, Livy and Tacitus regated H. as both a science and an art. In writing down the results of their studies they accepted literary and artistic standards, but they were at pains to collect the facts and submit them to analysis. To the Gks. in particular H. had a definite value in that it led to the formation of right opinion which in their view was as necessary for the conduct of life as scientific knowledge. At the same time they did not develop in their historical thinking any conception of an ultimate goal of human society. They were conscious of continual change in human life but not of any agelong tradition moulding it.

of continual change in human life but not of any agelong tradition moulding it. The theory of H. which they doveloped was consequently one of recurring cycles. With the rise of Christianity as the dominating theory of life the theory of H. and the writing of it changed. By the fifth century A.D. the W. Empire was oversun by the barbarlans, and Rome itself had been sacked. Much of pagan literature and learning was lost, and what was still known was regarded with hostility. Human history came to be seen as a series of events essentially condi-

tioned by divine intervention and revelation which could ultimately guide mankind to a definite and desirable goal. This interpretation of H, was first outlined in St. Augustino's City of God, and from the lifth to the lifteenth century it continued to be generally accepted. It gave a unity to H, since it presented all significant events as the effect of a single cause—the Will of God. Since the city of God' would ultimately friumph and might mdeed come suddenly upon the world, what happened to the world meanwhile was of minor importance. Mainly because so few others were literate, monks were the chief (though not the only) historians of the Dark and Early Middle Ages, and the bulk of their works consisted of chronological notes (e.g. the Anglo-Saron Chronicle, and the works of the Venerable Bede and Matthew Paris) while o few educated observers like Floissart left descriptions of local contemporaty events.

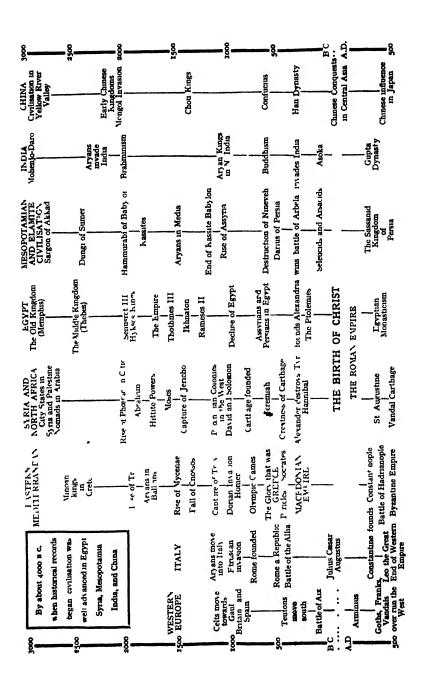
ary events.
With the Renaissance there was a return to the humanistic view of H. based on that of the ancts. Again it became a function of the historian to study and interpret human actions and human thought. H. after the Greeco-Rom. model again became concerned with material values and with instruction in the art of politics and practical life. Machiavelli set hunself to understand human actions, to study political history, and to explain to the Its, why things had happened as they did. From Italy the new approach to learning spread to other countries. It, historians, often at the invitation of the rulers of the new nationalist states states which were in part the result of the revival of the later Rom, conception of revival of the later Rom, conception of sovereignty (absolute military monarchy or 'Casarianism'—Monnusen)—introduced the new idea of H. to European courts. Polydore Vergii of Urbano was commissioned by Henry VII. to write the history of England, a task which was completed in 1533 and presented to Honry VIII. At the same time, the discovery of America and the formulation of the of America and the formulation of the basic principles of experimental scientific method played a part in encouraging an interest in H. While less and less could be taken for granted in a world which had telt the impact of the new discoveries, the beaunings of science suggested new criti-cal methods of approaching the past. Thus Wm. Camden in his work on the topography and archeology of Britain re-constructed the past from data in much the same manner as the natural scientists of the time were using data as the basis of

their scientific theories.

The reaction away from the medieval view of the nature and history of man was virtually complete in the eighteenth century.

Humo and Voltaire established the belief that human life had been in the main a matter of blind and irrational forces but

Tables on pages 154-155.



AMERICA	500 600 End of First Mayan Emilie	-88	Rive of Inca Empire of 900 Peru		Aztees in Mexic	opt.	Spanseth Conquest of Mexico, French and Batista in N 1600 America French and British struggle for Marketing America for Marketing Formation of U.S.A	Latin-Amer Revolutions 1800 American Civil War Federation of Canada 1000 Lnd of ' isolation
ASIA	Volumed 570-032 1 Dynasty	1HE (15–507 1 AP 4510\ 1 J) I 4M \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	THE CRUSADES (1095-1291) Rise of M. 1201. Ghengtur Man (4 1227) Int. 2. 04. of Resista Corpuest of China . 11. 11.	Notaum-dan I mpire in India (D lui) Ma. ol. lus traveis 12 . os	1 15 of Octor an Luras Mun, Dynasty Tamerlane (1 1105) 1153 (at ture of C rastantinople	1525 babur's intastion of India 1 artiguese, Dutch, and The Morgoi Empue British Last franan Companies The Manchu Dynasty I rench and British strug-le for india Decline of Turkish Finpure	Indian Mutuny Opeuing up of China and Russia in Central Asia Russo, Jaj rucso War Chinese Revolution Chinese Revolution Jahan in In ha Jahan mades Manchuna Independence of India Pakistan, Ceylon, Burma
LUROPE	Soo Rise of the Papacy Spread of Mrv astrusm	St. Boniface in Germans Mostom 11 Austral (* Spair Soo Charlemagno—Holy Roma 1 I 1 pre	Serace rult ne in Sp3 3 900 Limperor Otto I Viking Raids and Conquests Ronanesque Architecture	Norman Conquest ot England Age of Feudalism	Rive of Towns. Rive of Towns. Rive of Towns. Rive of Habian Parting ago. Popes at Avigacon		the of captulism The open is the ingree Age of Louis XIV. Rise or Prussia and R	Rise of Nationalism—Lib'ration—Democracy—Socialism—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperiusm—Imperium—Imper

yet was capable of being converted into by the growing importance of H. as a something rational. To them the Middle subject of univ. study, and the historical Ages were a period of barbarism. They consequently had little interest in any but professional or 'professorial' historians the modern period and for this many but professional or 'professorial' historians the modern period and for this reason did ittle to improve the methods of historical research. Hume's *History of England* is slight and sketchy in its account of any period earlier than the Tudors, and Voltaire expressed the view that there was no reliable historical knowledge of events wallow than the sixtorith century. carlier than the sixteenth century. To (libbon also the motive force of H. lay in human irrationality, and in The Decline and Fallof the Roman Empire he wrote the story of what he himself described as the triumph of religion and barbarism. In the latter half of the eighteenth century, however, greater emphasis was laid upon the idea that mankind was capable of a rational life, and a more scientific study was made of the advance of H. from barbarism towards reason and enlightcument. Turgot drew a distinction between natural phenomena, which remain the same for ever, and human society, where knowledge is acquired and experience transmitted. In this view the H. of mankind, despite periods of disturbance, is one of continual advancement. Condurcet also set out to show 'the successive changes in human society, the influence which each instant exerts on the succeeding instant, and thus in the successive modifications, the advance of the human species towards truth

and happiness.'
The Fr. Revolution broke rudely upon the idea of progress. As a reaction from the excesses of the Revolution a new interest was taken in the Middle Ages; there was a sense of glamour in far-off times by contrast with the doubt and disturbance of the present. This historical interest was linked with the Romantic movement in literature in which it found its chief expression. It showed itself in historical scholarship, however, mainly in the work of the Ger. historians of the time, among them Momrusen, men who lirst directed their attention to the study of classical texts and anct. inscriptions but classical texts and anct inscriptions but later extended their range to include the Middle Ages. In Germany the impulse to study medieval H. came from outside academic circles and was due in part to political motives: the medieval empire had been the archetype of Ger. unity and what Germany had once achieved she might, it was argued, achieve again. The critical methods of the Ger. historians in the examination and analysis of their sources and the solid basis of their scholarship had a great influence on the work of historians in other countries. In England up to the middle of the eighteenth century H. had been mainly regarded as a specialised branch of literature, and the greatest names of that time, for instance Macaulay and Carlyle, were those of men who were writers and men of affairs as much as they writers and men or amints as much as they were historians. By the eighteen-seventies, however, Eng. historians were following the method adopted by the Gers. and were becoming increasingly adentific in their assessment of historical evidence. This tendency was furthered

writers of the time were more akin to the professional or 'professorial' historians of the twentieth century than to their predecessors. Stubbs, for instance wrote for scholars and students, and Mathand's work on the history of law and institutions in kingland, despite the brilliance and lucidity of his style, is mainly a technical study which is not always easy for the layman to follow. At this period a number of societies were founded for the editing and pub. of anct. legal and the editing and pub. of anct. legal and historical documents. In 1887 Maltland founded the Selden Society for the pub. of anct. legal records and himself ed. sey. of its pubs. As the sources of H. came to be more and more explored and knowledge was amassed, research tended to concen-trate on various detailed aspects with the trate on various detailed aspects with the background of which only the expert could be familiar. H. was in fact in danger of becoming a purely technical subject, and the wider function of the historian in interpreting the past to the present tended to be forgotten. Already, however, a note of revolt against the conception of H. as being concerned only with politics and constitutions had been sounded by Carlylo: 'the thing I want to see,' he wrote, 'is not Red-Book lists and Court Calendars and Parliamentary Regiswhat men did, thought, suffered, enjoyed
... The very title of John Richard
Green's Short History of the English
People is, again, indicative of a wider,
more human approach to H. His work was the result of an awakening social con-science. Arnold Toynbee's Lectures on the Industrial Revolution reflect a similar impulse and were written under the in-fluence of a new and wider conception of social justice. The induces of Karl of social justice. The influence of Marx tended is the same direction. To Marx, H. was basically a story of the struggle between social classes created by the methods of production in use at any given time. In his view the economic structure of society is the real basis on which rested the legal and political superstructure. Relatively few historians have accepted the Marxian thesis that economic history is the clue to all H., but the influence of Marx stimulated an interest in the economic and social approach to H.

In recent years historians, while shed-ding nothing of the tradition of sound scholarship and careful research inherited from the later nineteenth century, have combined these qualities with a deter-mination to examine the wider aspects of H. Among many modern scholars, Prof. G. M. Trevelyan may be quoted as one who holds the view that H. is both a science and an art, that while the discovery of historical facts should be scientific in method the exposition of them for the reader should partake of the nature of art, 'the art of written words, commonly called literature.' Try relyan too is among those who have embodied their learning in general works of interest to the nonspecialist reader as well as to the specialist. H. becomes an aid in the philosophical interpretation of human life, and in this connection mention must be made and in of the great comparative study of civil-isations which has been undertaken by Prof. Arnold Toynbee in his Study of History.

History.

See B. Croce, The Theory and History of Historiography (Eng. trans.), 1921;
J. W. Bury, Ancient Greek Historians, 1929; V. G. Childe, Man makes Himself, 1936 and History, 1947, A. Toynbec, A Study of History, 1936; E. E. Kellet, Aspects of History, 1938; J. W. Thompson, A History of Historical Writing, 1942; G. M. Trevelyan, History and the Reader, 1945; R. G. Collingwood, The Idea of History, 1946; K. B. Smellie, Why we read History, 1947. History, 1947.

Hit (anct. Is), tn. of Iraq, on the r. b. of the Euphrates, 100 m. W.N.W. of Bagdad. Camel posts start from here for Damascus, and the Euphrates is navigable up to this point. There are famous anct. bitumen and naphtha pits. Pop. 5000.

Hitchcock, Edward (1793-1864). Amor. geologist, began life as a congregationalist minister in Conway, Massachusetts, but in 1825 accepted the chair of chemistry in Amborst College—a post which had been offered him largely because of his Geology of the Connecticut Valley (1824). In 1841 he pub. the third and final report of his indefatigable researches into the geology and mineralog, of Massachusetts. In 1844 he became president of his old college where he taught natural theology, besides his chosen science. An assiduous contributor to scientific journals, H. strove to popularise his subject, and also pub. in 1851 The Religion of Geology.

Hitchendon, see HUGHENDEN.

Hitchin, mrkt. tn. of Hertfordshire, England, on the R. Hiz, 32 m. N.N.W. of London. The chief trade is in corn, malt, and flour, while layendor and peppermint are grown and their oils distilled. Girton College (Cambridge) was originally estab. here; St. Mary's church is the biggest church in Hertfordsire. It stands on a Norman foundation and has in its fabric Rom bricks, a massive buttressed tower, Rom bricks, a massive control doorway. H. and a thirteenth century doorway. H. Here has associations with famous men. Here at Church House, once a school, Eugene Aram was a master. George Chapman dramatist, poet, and translator of Homer was born at Tilchouse Street. In the Baptist ('hurch in the same street is a Baptist Church in the same street is a chair John Bunyan gave the minister in his day. Sir Henry Hawkins (late Lord Brampton), who as a criminal judge has had few equals, was born at The Grange in 1817. Sir Henry Bessemer, inventor of the steel process which bears his name, was born in 1813 at Charlton nearby. Pop. 14,000. See R. Hine, The History of Hillehin, 1927-29, and Hitchin Worthics, 1920. 1932.

Hitler, Adolf (1889–1945), Ger. dictator, b. at Braunau-am-Inn, Austria, his parents being of Bavarian and, perhaps, Bohemian, peasant origin. His father was a Customs officer in the Austrian service, who till late in life was known as Schicklgruber

Hausname and a Schreibname and the change from one to the other is evidence of the sale or cession of property rights to a new owner) and who married three times, Adolf being the only son of his third wife. Adolf went to the best school available and was intended for the civil service, but the boy was interested only in drawing and architecture. His father dying, however, in 1902, left no resources for Adolf's continued education, and for the continued and the continued by the continued of the continued by the continued of the continued by the continued of the some years he lived a life of hardship.



E.N.A.

ADOLF HITLER

With his mother he went to Vienna hoping to become an architect, but had to earn his living as assistant to a house-painter and by selling indifferent sketches. After few years' miscrable existence in Vienna he left in 1912 to settle in Munich. These years of penury and even mendicancy were formative of both his philosophy of hie and of his character. Vague Nordic open a mingled in his mind with ideas of the clevating influence of war and with less mational dreams of Ger. national unity; and in the attempt, later, to realise these dreams he proved himself the successor of Bismarck. He completed Bismarck's work because, having himself a singularly forceful and sensitive personality, he was exposed to and responded to all the influences that were moulding Germany's character and destinios in the first three decades of this century. In the particular of this extreme observation between (Austrian peasants have two names, a period of his extreme obscurity between

1904-12 he imbibed the pan-Germanism |

1904-12 he imbibed the pan-Germanism of Georg von Schoenerer, who indeed inspired H.'s strange views in Mein Kampf, and he studied the tenets of Karl Marx and Engels only to reject them. Even thus early he conceived a violent antipathy to the Slav influence in the Dual Monarchy and an equally violent anti-Semitism.

When the First World War opened he first volunteered for service with the Austrian forces but was rejected for physical unfitness. He then joined a Bavarian reserve regiment. He fought in the trenches, acted as despatch rider, reached the rank of gefreiter or lance-corporal, won the Iron Cross, was wounded in the Somme Battle, 1918, and was badly gassed in 1918. He lay blinded and helpless in hospital through the months of the revolution and the Armistice. It would have needed a man of much greater equipoise not to be carried away by the legend of Germany's 'stab in the back,' and he convinced himself that Germany had been defeated through the treacherous and enfeebling influence of the Marxist socialists. Back in Bayaria while attendand enfeebling influence of the Marxist socialists. Back in Bavaria while attending and, later, conducting, courses designed to keep ex-servicemen away from Bolshevism, he came under the influence of Gottfried Feder, the intellectual father of the Nazi movement. It was at this time that he began his political career. He became the seventh member of an insignificant political group in Munich, the 'Germau Workers' Party,' and, equipped with a few definite ideas and a equipped with a few definite ideas and a clear insight into the value of the arts of propaganda, he soon distinguished himself by his gift of popular oratory. Through his friends, Capt. Roehm, a staff officer of Munich, and Gen. von Epp, he maintained close contacts with the Recchsmanusined close contacts with the learns, webs, which were to stand him in good stead. In 1921 he ousted Droxler, the founder, and himself became leader of the party, which now styled itself the National Socialist German Workers' Party, its programme being H 's nationalist and anti-Marxist creed. Differing from Rochm as to the function of the newly-created Sturm Abbellung troops (Brownshirts') H. organised a special detachment to be his own political execustaffel (S.S.) or Blackshirts formally estab. in 1926 in imitation of Mussolini's organization Through Roehin H secured the tact approval of the local high command, togother with financial resources. sample (1.5.5.) or Discission of Mussolini's organization Through Roehin H secured the tacit approval of the local high command, togother with financial resources. Thus encouraged he made his first attempt, in alliance with Roehin, Ludendorff and Goering, to selve power, in the notorious mitsch in Munich of Nov. 9. the challenge and again dissolved the 1923, the intention being to make Ludendorff Dictator. Two days later he was arrested and with others, including Ludendorff, tried for treason. The Reichswehr intervened behind the scenes Schleicher, who was also manocuvring for to stifle the military connection with the reactionaries, but H. was sentenced to five years' imprisonment and incarcerated in the fortress of Landsberg im Lech. Here he worked on the final draft of Mein Rampf (g.v.) with the aid of his friend Rampf (g.v.) with the sid of his friend Rampf (g.v.) with the sid of his friend Rampf (g.v.) with the aid of his friend Rampf (g.v.) with the sid of his friend Rampf (g.v.) with

who has not read this strange rambling one-thousand page autobiography, philone-thousand page autobiography, philosophy and programme, with its prolixity and hombast, its candour, its peasant shrewdness, its fanaticism. Meanwhile his party disintegrated. Released under an amnesty in 1925 he set to work immediately to rebuild the party organization, though for some time Strasser, creator of the Nazi party in N. Germany, was more influential than H. in the party ranks, whose strength in the Reichstag was only twelve. H., however, gradually recovered the ground he had lost since the abortive pulsch. By 1930 he was the undisputed head of a considerable party. Funds were increasingly flowing in from Funds were increasingly flowing in from the big industrialists, who saw in National Socialism (q.v.) their best safeguard against Communism. 'Nationalism' gradually superseded 'Socialism' in the party programme, though its language was

when the world economic crisis came in 1930 H.'s party exploited the disillusioned and discontented masses as well illusioned and discontented masses as well indeed as the more solid elements, who saw their standard of living threatened by the crisis: and in the next election, after Brining (q.r.) had dissolved the recalcitrant Reichstag, H.'s party won 107 seats. Shortly after this he stood against you Hindenburg in the presidential election and in the first ballot he barely suggested in pregretaling respectively. succeeded in preventing von Hindenburg from securing the necessary absolute majority. Beaten in the second ballot H. majorby. Braten in the second ballot Hawas, nevertheless, now a political power to be reckoned with. In a rapidly deterior-ting political situation Chancellor Bruning felt compelled to govern by decree and, though liberal in outlook, his regime paved the way to dictatorship. But in May 1932, he fell, after securing the re-election of you Hundenburg as president and dissolving. H.'s. Brown Army. But though H regarded himself as heir to the chancellorship, he was now baulked by the covert resistance of the old Right wing the covert resistance of the old Hight wing rigine, with its backing of industrialists and Junkers. When you Papen became Chancellor, H. remain d aloof. You Papen dissolved the Reichstag but the Nazi party doubled its strength and they and the Communists seemed to be sweep-ing the country. H. was now at the head of the biggest single party. When, how-

Thus in January, 1933, began the period of the Third Reich. By the end of that year the one-man Party had become the one-Party State. In the elections it was only by the support of the other Right parties that the Nazis had won a majority vote. Terrorism and brutality, however, eath. H. in an unassallable position. parties that the vote. The rorism and brutality, nowever, estab. H. In an unassallable position. Opponents disappeared by assassination or into concentration camps (see Buchev-wald). The conservatives were should be also be a state enough the was astute enough. WALD). The conservatives were should-ered aside, though H. was astute enough not to offend any powerful interest. When some of his followers, wearled of Socialistsome of his followers, wearled of Socialist-and Jow-baiting, murmured against the dropping of the 'Socialist' and Radicai elements of the Party programme, II. suddenly struck down any and all of the leaders, Nazis or reactionaries, likely to give trouble, the chief victims being Strasser, Rochm, and Schleicher and his wife. This was the infamous 'purge' of June 30, 1934, in which a hundred National Socialists were murdered. All power now passed to the National Socialist executive, which, for all practical burexecutive, which, for all practical purposes, meant H. himself. The true reason for this purge may never be precisely known, but it is generally believed that Roohm aimed at getting the Reichswehr embodied in his Sturm Abbeilung organization, which H of course resisted Soon afterwards Hindenburg died and H. was declared his successor; but he abjured the time of Reichspräsident in favour of Fuehrer and Kanzler. Thus the mendicant adventurer of Munich now

became the master of Germany. Sure of his position in Germany by ruthless terrorism. II now began his long campaign to re-tore Ger. power in Europe, heralding his advent to power by a series of increasingly grave breaches of treaty obligations and by flouting European opinion. The first need was to rearm Germany which was done secretly at first Germany which was done secretly at Inst. and then ever more flagrantly. But before launching his attack on the Verseilles Treaty he awaited the plebiscite on the Saar in Ian 1935. The result, partly influenced by terrorism, was an overwhelming majority for retrocession to Germany. In March he denounced the military clauses of the Treaty and Intro. definity. In Maior is accounted with a military clauses of the Treaty and introduced conscription for the Reichswehr A year later he boldly risked marching his forces into the demilitarised Rhineland zone, at the same time denouncing the treaty of Locarno (q.v.), which, he claimed, had been abrogated by the Franco-Soviet Alliance. This, coupled with conscrip-tion, transformed the military situation, for at one blow it deprived the W. Powers Alliance. This, coupled with conscription, transformed the military situation, for at one blow it deprived the W. Powers of their strongest weapon, freedom of entry into Germany. Thenceforward II. could hope to resist an attack on his W. front with one arm while the other was free to threaten the E. In July, when the civil war in Spain broke out, II. seized the opportunity to test his army and air force on the side of Franco. And once again the democracies hold off and weakened, while Germany waxed in strength and II. in defiant confidence, comformably with dootrines contemptuously expounded in Mein Kampf. H. now pursued his tech-

nique of deliberately lying so as to luli future victims into a sense of false security while hatching his aggressive schemes. Yet in all candour he himself had averred that the bigger the lie the better the chance of its being believed. The remilitarisation of the Rhineland was followed by two years of the most active Ger. military preparations coupled with an economic reorientation aiming at autarky. Events abroad in 1936-37, such as the League's ignominious fallure to check Mussolini's Abyssinian adventure, increased the nervous tension in Europe, and went far to strengthen H.'s position. Mussolini was drawn into the orbit of H.'s machinations and intrigues, and their collaboration found expression, in Sept. 1937, in the Rome-Berlin Avis (see Axis) a diplomatic coup whereby H. gained an while hatching his aggressive schemes. a diplomatic coup whereby H. gained an allv at the expense of the Powers of the Versalles *Piktat* whose moral influence had well nigh vanished in a weiter of appeasement.
The end of 1937 saw Germany's course

set for an expansionist foreign policy which for two years won spectacular successes. Austria was seized without a successes. Austria was seized without a fight, a country which even Bismarck had shrunk from touching. H. had acquired Austria by the simple process of manipulating an abrupt crisis in Austro-Ger. relations and then sending the Ger. army across the frontier and forcibly incorporating Austria in the Reich. Mussolini despite his apprehensions was too covered to make a counterecting move owed to make a counteracting move.
But the great test of this policy came with
the campaign for the liberation of the
Sudetenland; for this was an attack on
a sovereign State bound by Treaty with
the W. Powers and by ethnic ties with Russia (see further under CZECHOSLO-VAKIA). But H. had gauged to a nicety the underlying realities of the immediate political situation. Enough for him that the cove, in the W. were not then prepared to fight. Then followed the humillating part of Munich (q.r.) and H. now seemed pact of Munich (q.r.) and H. now seemed in the eyes of the average Ger., not only to be the preserver of peace but a consummate statesman, outrivalling all his predecessors in extending the Reich frontiers. As doubt each successive seizure enhanced the feeling of resentment in the W. as much as it enhanced H's prestige in the Reich. Yet his occupation of Prague was his first had blunder owing to its effect on Bitt. foreign policy and on Mr. Chamberlum. It in fact led to the Brit. guarantee to Poland and all that that was to inuly to Poland and all that that was to imply

expansion S.-E. and made himself the In his New Year address in 1940 he demost powerful dictator in Europe since clared that he was fighting for a 'New Napoleon I. In the talks with Mr. Order' (q.r.) in Europe, and in March he Chamberlain at Berchtesgaden and Godesberg he had reiterated his stock phrase to the invasion of Norway and Denmark used after the rape of Austria—that he and the overrunning of the Low Countries had no more territorial claims to make. Yet soon afterwards he was invading and overrunning, not merely the Ger. in-habited regions of Bohemia, but the whole of Czechoslovakia, and then himself went to Prague to proclaim yet another blood-less victory, while at the same time he announced his annexation of Memel in violation of the Versailles Treaty. Poland was the next victim marked out

for H's hatred and aggression. He was now claiming the retrocession of Danzig and demanding the Polish corridor (q.r.) and in response to Poland's appeal, Britain and France at once guaranteed Polish independence. II. was shaken by this development, more particularly when the two W. Powers began negotiations with Moscow. For if he now proclipitated with Moscow. For if he now procipitated war it would be to rouse the haunting spectre of a war on two fronts. But rather than abandon his cherished designs on Danzig and the corridor he preferred to swallow all that he had previously said in condemnation of the Bolshevist regime and proposed the non-aggression pact with Russia to which Stalin agreed on August 23. With the removal of any probability of Soviet assistance to the W. Powers the way was clear for H.'s blitchrieg on Poland. He went himself to superintend the slaughter and strutted among the ruins of Warsaw,

which were destooned for the occasion.

The first weeks of the Second World War, involving the callous conquest of Poland, illustrated H.'s cynical fiction of a defensive war against 'encirclement' or, in his own phrase, a state of neither or, in his own pirrase, a state of neither war nor peace, a convenient fiction which left him with the initiative both on the battlefield and in the sphere of diplomacy. Had they but taken literally the crude assumptions in Mein Kampf his cuonies would sooner have understood the full implications of his methods, his policy of attack from within or of corrupting a nation from within and of repeating the process with one nation after another, while his opponents continued to rely on the false security of an outmoded diplomacy. After the immolation of Poland, H., speaking in the Reichstag on Oct. 6, in a remarkable rhetorical outburst, made his lest offer to the Albert Duty of the Albert of the A lest offer to the Allies. But as a pica for peace it suffered from the new univer-sal realization that his word could in no circum tances be trusted. A month later be spoke at Munich in the Burgerbrau beer he spoke at Munich in the Burgerbräu heer cellar on the anniversary of the 1923 pulseh, announcing that he had ordered Goering to prepare for a five years' war. He left the beer cellar somewhat abruptly and soon afterwards there was an explosion in which a number of persons were killed. Though it was averred by Ger. propagandists that the attempt was engineered by foreign agents, it was generally believed that H. had departed early in the knowledge that it would occur. early in the knowledge that it would occur.

and France.

The disastrous events of spring and summer, 1940, culminating in the disgraceful armistice with Pétain (q.v.) only confirmed the average Ger. belief in H.'s genius. Following these conquests the natural littleness of H. revenlingly asserted liself in the resurrection of the armistice coach of Complègne of 1918 for the armistice of 1940. But although the Hitzkrien had won remarkable successes it had krien had won remarkable successes it had fulled, owing to the obtuseness of the incomprehensible Brit.. to bring victory. After the Battle of Britain (n,r.) had been in progress for some time H. hegan to realise that Britain could not be conquered from the air and, having met Vinssolini at the Brenner and again in Florence to concert furfier measures against her had learnet Februs, in Speak. against her, he also met France, in Spain, probably with the object of inducing him to co-operate in the blockade of Britain. H.'s thoughts, indeed, turned increasingly on U-boat warfare. In his New Year's proclamation to the Reichswehr in 1941, proclamation to the receivement in 1941, he promised victory over Britain that year and the destruction of every nation which 'ate of democracy.' He continued to repose confidence in submarine warfaro and sought to fix on Mr. Churchill's shoulders the responsibility for unrestricted or indiscriminate bombing. In the arring of 1941 he attacked Vurselayle the spring of 1941 he attacked Yugoslavia and Greece and went to join his advancing armies there, while continuing to belabour Britain with his bombers and striking under water at her seaborne supplies. H knew that only successful invasion could bring Britain to her knees. But both II. bring Britain to her known. In the and his military experts feared to make the effort, and as an alternative II. in 1941 planned to attack the empire at its Achilles-heel in the Middle E. This plan, 1941 planned to attack the empire at its Achilles-heel in the Middle E. This plan, however, depended for its success on the neutrality of Russia and, not being sure of this, H. and his advisers decided to combine the attack on Egypt with an invasion of Russia itself. Just previously (June 3, 1941) he again met Mussidini at the Brenner, ostensibly to set in motion a European peace. Three weeks later he doffed the mask and, breathing anathema on the Soviet gov. as the 'Jewish-Bolshevist clique,' launched breathing anathenia on the Soviet gov. as the 'Jewish-Belshevist clique,' launched his legions against the hated Slavs of Russia.—a piece of bluff and treachery which he had revelved for many years, having in fact imparted his scheme to Dr. Rauschnig in 1934. This fatal decision revealed the essential weakness underlying all H.'s pellpotitik, and it is probable that he took it against the opposition of other Nazi leaders and against the advice of many members of the Ger. General Staff. But in June 1941 he had taken the plunge for good or ill. Thenerforward he strove to divide Russia from the W. Allies by harping eternally on Germany's anti-Bolhovik crusade (see also Anti-Comintern Pact) and even also ANTI-COMINTERN PACT) and even

The Ger. campaigns in the Balkans and the Mediterranean were brilliant in conception and execution but Brit. intervention in Greece and Brit. resistance in Crete and Libva delayed H.'s time-table. probably fatally, and, as the summer of 1941 were on it was becoming obvious that Ger. optimism had outrun itself. For some time H was silent, but on Oct. 4, at a meeting of the Winter Help Campaign, he announced a 'gigantic operation' which would bring about the defeat of Russia. Then a lew days later, he boasted that he had smashed her. The final desperate assault on the Caucasus falled disastrously, and at last the voice of the critics in Germany was heard. But, as always in these military crises, it was un known whether H. had imposed his will on the Ger. Goneral Staff or whether the generals, appreciating the disastrous effects of the retreat in Russia on Ger military and civilian morale, asserted therealy was content of the retreat in Russia on Ger The Ger. campaigns in the Balkans and military and cavilan morale, asserted themselves against H. But on Dec. 21 following the ominous failure of the following the ominous failure of the Reichswehr before Moscow, H. abruptly announced the dismissal of the commander-in-chief. Brauchitsch, and his own assumption of direct control of all military operations. Against further disaster he staked the legend of his own intuitive talent—a decision no doubt hastened by the entry of the United States into the war and the fact that four-fiths of the world was now ranged against Germany. For the circumstances of the Amer, intervention disposed of the of the Amer, intervention disposed of the

sent Hess to England on the amazing mission of winning over Britain to a the Volga at Stalingrad while Rommel crusade which, had it by any conceivable mischance succeeded, would have out muniched Munich. It is, of course, possible that Hess flew over on his own initiative, but this is improbable except on the extreme supposition that Hess, alone of the leading Nazis, was utterly opposed to the Russian variue and hoped somehow, to thwart it through British action.

The Ger. campaigns in the Balkaus and of Stalingrad was even more reverberating.

For, not long before, H. had exuited over
the expansion of Ger. lebensraum at the
expense of other European nations, and,
on Oct. 1 at the Sportspalast, with charteristic returning to the provided the capture of Stalingrad. His strenuous attempts to make good his pledge cost (fernany tremendous losses in life and material in a defeat which will loom large material in a defeat which will loom large in the chronicles of war for all time. From that time H. spoke less of Ger. victory than of the inability of the Allies to defeat Germany and in his New Year Order of the Day for 1943 his tone Indicated a more chastened Fuebrer. For Germany's in-dustrial potential was now being severely damaged by air attack, and the Soviet damaged by air attack, and the Soviet armies were pressing ever more massively on the E. Front. On Feb. 25, instead of speaking, H. issued another proclamation, this time to celebrate the anniversary of the Nazi Party's foundation. His silence set rumour abroad and a month later he feit bound to break his long reticence, His address, however, was a lifeless reticration of raw clicht's utbrod in a perfunctory hurried mumble.

But new crises soon faced him. In July 1943 his brother dictator, Mussolin,

July 1943 hts brother dictator. Mussolini, fell from power a few days after he had met H. to demand more help in the defence of Italy. H. tred to palliate the capitulation of Italy, which soon followed, by stressing Italian sabotage and weakness of will to fight and by claiming that he had for some time foreseen this result. I'wo months later, in Munich, at a party gathering he seemed to regain something of his old confidence. In emphatic tones he declared that the hour of retaliation had come and that everyth by was possible of the Amer. Intervention disposed of the last chance of a compromise peace even if the generals overthrew H. and sought peace as a military dictatorship. Whence the very natural desire of the generals to escape responsibility for the ultimate collapse which they knew they were powerless to avert.

It's New Year message for 1942 showed a marked decline in buoyanes. It's New Year message for 1942 showed a marked decline in buoyanes. It's need, it is all, he said, 'pray to God that the year will bring a decision'—a strange invocation in the light of the Nazi 'creed.' But there were rumours of disaffection among the Ger, generals and among the radicals in the Party, and H then appointed Bormann to secure coperation between the Party and the State. At this time he was making the greatest efforts to strengthen the home front and to augment the vast numbers of foreign slave-workers driven into the spring offensive. The Ger, armies had heen driven ont of Russia matter the Auglo-Amer. landing in Normandy to supply the Reichswehr for the spring offensive. The Ger, armies had heen driven ont of Russia at remnants of a Ger. 'opposition,' led by certain generals of the Reichswehr, H. could hope for further success in the allies still far from their total war-effort, H. could hope for further success in the sided and, in fact, in the earlier half of two elements of the Left, attempted a seven ele

coup d'état which had obviously been long prepared. The signal was to be the assassination of H., but the bomb which essessmenton or H., but the bottle which was placed in his headquarters by a staff officer named von Stauffenberg failed in its purpose. H.'s staff were all killed or wounded. H. is said to have sustained injury to an eardrum besides possibly other injuries. The fact that he had escaped death was not known to the constitutions who proceeded to execute their spirators, who proceeded to execute their plan, but with disastrous results to them-selves, for they were quickly rounded up and executed after trial before a 'People's and executed after trial before a 'People's Court.' The revolt, however, had shaken the Nazi regime to its core. On the night of July 20 H. broadcast an appeal for loyalty and discipline. When the immediate danger was past, the badlyfrightened Fuehrer instituted his last and most eavage 'purge,' thousands of men and women being shot, not because they were implicated, but because they might conceivably have led another rising. At the same time Himmler (q.n.) took command of the army inside Germany so as to tighten the Nazi grip on it. Thenceforward the Ger. people had no alternative but to follow H. to perdition. After his microphone appeal of July 20 he again relapsed into silence and obscurity. It is not improbable that he had been more not improbable that he had been more seriously affected by the bomb explosion than was revealed and that Himmler had in practice assumed the gov. of the country. This seemed to be confirmed by the proclamation on the formation of the Volkssturm: but H. continued to issue some sturm: but H. continued to issue some proclamations and once sgain, on Jan. 1, 1945, he spoke on the wireless, from E. Prussia. But as the Allies pressed into Germany from all sides H. succumbed to the pressure of great events. Obscurity shrouds his final hours. It was rumoured that he would retire with the S.S. and Nazi fanatics to some last redoubt in Bavaria and then that he had changed his mind and resolved to remain in Berlin, perhaps with the idea of creating a legend perhaps with the idea of creating a legend pernaps with the idea of creating a legend by an heroic death on the barriers as those were stormed by the triumphant forces of Marshals Zhukov and Konley. But as events proved he had no need to seek death, for death in any case was alroady at hand.

H. achieved the triumph of the Nazi party in Germany by a mixture of deceit and violence, and used the same devices to destroy other nations. From the time he became master of Germany he made lies, cruelty and terror his prin. means to accomplish his purpose; and he became in the eyes of sirtually the whole world, an incarnation of absolute evil. The neurotic, who made himself leader of the Ger. race, inflamed it with his ambitions. His monument is the devastation he wrought, his dirge the grieving of nations at the miseries he heaped on thom. Nono of those who in past centuries have sought to conquer Europe set his traps with the same cold deliberation, inveigled his prey towards them so cunningly and, when it was in the toils, struck with such ferocious and concentrated fury. None had his sorm of neonles weaker than his own nor

his ingenuity in torturing them when once within his power. His portentous power came from a combination in a single being of a soul obsessed by injured pride and hatred, a mind able to devise the means of gratifying them, and the tenacity of a remorseless purpose. His immediate aim when he entered politics was the redemagnet. when he entered politics was the redemp-tion of the Ger. people from the humilia-tion and consequences of defeat: but even tion and consequences of defeat: but even then he was looking far ahead of this goal, to a Herrenvolk to be. The Nordic theories of Gobineau and Lapouge equipped him with a philosophy which demanded helots for its fulfilment, and he found these among the Jews, Slavs and marxists whom he bout to his purposes with an impassioned hatred. He found to the divided and tortuned eater of sind the divided and tortuned eater of sind in the divided and tortured state of mind of the Ger. people the symbol and ex-pression of his own morbid emotions and interiority complex. He made it his life-work to identify himself with the Ger, people and, by inflaming their animosities and ambitions, to find an outlet for his and ambitions, to find an outlet for his own. From an intuitive understanding of the Ger. mind and psychology he elab-orated theory and practice of propaganda which, because it worked on people with obsessions similar to his own, achieved startling success; and later, with Goobbels (q.1.) he devoloped it into a new and foarful instrument of tyranny. His resourceful-ness was extraordinary, and in the art of suffing policy to necessity he had no equal. If he had cunning and ruthless coadjutors in Goering, Himmier, Goebbels and others at his side, it was H. who had appointed them and shaped their course; it was his name which rallied Germany and his character which informed every develop-ment of Nazi policy. It has been well said that if his life and statecraft be seen in true perspective it becomes plain that, though he would gladly have kept England and, later, the United States, out of the war. He was ready to risk dety-ing a world in arms if by that means alone he could estab. the Germany of his ambition.

ambition.

It is difficult in these years to achieve full objectivity in the assessment of H.'s record in mankind's story. Evil genius of Germany and indeed of mankind, he was yet also, or so hist. may decide, the one political leader of genius Germany has produced since Bismarch. One thing is certain: like Napoleon he changed the world even if he could not conquer it, and the tragedy of the war he unleashed upon an the nations induced the protoundest questionings of the moral basis of most existing political and social institutions. His tragedy and that of Germany was that his later madness undid all that had been achieved for his country in the years before moral and perhaps mental corruption set in.

at the miseries he heaped on them. None of those who in past centuries lave sought to conquer Europe set his traps with the same cold deliberation, inveigled his prey towards them so cunningly and, when it was in the toils, struck with such ferogious and concentrated fury. None had his speaking to them like a man possessed by scorn of peoples weaker than his own nor land all-consuming passion. His speeches

revealed no truly original ideas. In them he relied largely on the emotional impact wrought on his followers by constant reiteration of past hist, and deep-seated prejudices common to many Gers.; and it may truly be said that his remarkably keen and subtle comprehension of the mind of the Ger, people was at once the mainspring and the ultimate source of his power for evil. His whole life illustrates the force of Plato's aphorism: 'Those who have no natural aptitude for justice and other noble ideals, and no affinity with them, will never learn the full truth about good and evil, however good their intelligence and memory may be in other fields. fields.

intelligence and memory may be in other fields.

See F. Schuman, Hitler and the Naci Dictatorship, 1936; K. Helden, Hitler's Biography, 1936; J. Turner, Hitler and the Empire, 1937; E. Lips, What Hitler did to Us, 1938; H. Rausching, Hitler Speaks, 1939, Hiller's Arms in War and Peace, 1940, Hitler wants the World, 1941; E. John, Answer to Hitler, 1939; Adolf Hitler, Hitler Speaks, 1939; L. Golding, Hitler through the Ages, 1939; L. Golding, Hitler through the Ages, 1939; R. C. Ensor, Hitler's Self-disclosure in Mein Kamf, 1939; H. Hauser, Hitler versus Germany, 1940; R. Baxter, Hitler's darkest secret, 1941; E. Vermoll, Hitler et le Christianisme, 1944; II. T. Roper, The Last Days of Hitler, 1947; H. Moors and J. Barrett (ed.) Who hav' Hitler ? 1947; Liddell Hart, The Other Side of Hitler, 1947; T. von Schlabrendoff, Revolt against Hitler, 1948; F. Meinecke, Die deutsche Katastrophe, 1947.

Hitopadesa, or 'Friendly Instruction,' free adaptation of the Fables of Bidpan (or Pilpav), which was itself a collection of old Hindu stories, derived eventually from the Pancha Tantra, or the legends and apologues of the Brahma Vishnu Sarman (second century B.C.). Though the Fables of Bidna were trans. In the sixth century

(second century B.C.). Though the Falles of Bidpen were trans. in the sixth century of Bidpan were trans, in the sixth century a.D. into Pahlavi (auct. Persian), and after wards into Arabio, Gk., Lat., and so into the tengues of modern Europe, they are best known to W. peoples by their modernised version, the H. This latter anthology, of which there are at least three Eng. trans., contains a number of loosely-interwoven animal tales, etc., which are strewn with moral apothegms and quality recounted after the manner of Anop or La Fontaine.

Hittite Language, see under Indo-European Languages, or group of

Hitties, and. people, or group of peoples, whose origin is still a matter of dispute. The Biblical names Heth and

the site of one anct. city, now known as Boghaz Keui, formerly Pteria, the anct. cap. of Cappadocia, which appears to have been occupied by the H. at a very early date. Pteria lies E. of the Halys, from which point roads radiated to harbours on the Ægean, to Northern Syria, and the plain of Cilicia. In the O.T. they are spoken of in Gen. xxiii. 10 as the children of Heth, dwelling in Kiriatharba (Hebron). In this reference Abraham appears dwell-In this reference Abraham appears dwell-In this reference Abraham appears dwelling among them as a stranger and wishing to purchase a place to bury his dead wife in. This he accomplished through Ephron the H., who sold him the cave and the fields of Machpelag. In the book of Ezeklel (xvi. 3), Jerusalem is described thus: 'The Amorite was thy father, and thy mother was a Hittite'; there are sev. other general references in the O.T. and they are also mentioned as individuals. other general references in the O.T. and they are also mentioned as individuals, e.g. Uriah the H. One reference (1 Kings x. 28, 29) mentions the kings of the H. buving horses and chariots from Egypt. This is interesting, because until the coming of the Hykses to Egypt, the horse appears practically unknown or little used, and the H. people came from a country where horses had probably been hered and appears practically unknown or little used, and the H. people came from a country where horses had probably been bred and used for a considerable time. To the Exyptians the H. were known as the Expytians the H. were known as the Expytians the H. were known as the Expytians are the Hyksos who conquered the Egyptians were the same as the Kheta, but at present it cannot be proved, but so far the extreme difficulty of correct dates makes it impossible to do more than theorize. Thothmes I. led his triumphant armies over N. Syria, and took the tn. of Kadesh, or Cedesh, the stronghold of the Kheta; this was not long after the expulsion of the Hyksos from Egypt. Thothmes III. waged terrible war against the Kheta, who were by this time evidently strong enough to be regarded as serious foes. They rose in revoit against Egypt, and Thothmes III. marched over N. Syria and reduced the tribes who had banded together with the II. to utter submission. Kadesh and Carchemish on the Euphrates fell into the lands of Thothmes, who marched back to Egypt laden with plunder and cantives. hands of Thothmes, who marched back to Egypt laden with plunder and captives: the king of Kadosh, however, escaped. In the reign of Amenhotep IV. (Akhnaton) the H. appear to have gathered great strength, and, throwing off the voke of Egypt, began to press steadily down on to the frontiers of her empire, taking fourthly one by one the tree of Swrite Medical Procedure. Hittles, anct. people, or group of peoples, whose origin is still a matter of dispute. The Biblical names Heth and Hittle indicate a people practically unknown until recent exploration, after 1870, brought to light a number of distinctive monuments. In 1880 Prof Sayce announced the discovery of a forgotten Hittle Empire once flourishing in Asia Minor. Their settlements and rule extended at various periods from Armenia to W. Asia Minor, and as far S. as Falcs that they were the White Syrians, or Syro-Cappadocians, known to Herodotus. Many monuments and tablets have been discovered in different forms of the rempire, taking forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The countries of her empire, taking forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The countries of her empire, taking forcibly one by one the tans of Syria. The countries of her empire, taking forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of Syria. The forcibly one by one the tans of syria. The forcibly one by one the tans of syria. The forcibly one by one the tans of syria. The forcibly one by one the tans of forcibly one by one the tans of syria. The forcibly one by one the tans of syria. The forcibly one by one the tans of them fill the forcibly one by one the tans of syria. The factors of the syrian pagnes of he had a factor of the syrian pagnes and by one the tans of the forcibly one by one the tans of the forcibly one by one the tans of forc

Kheta.' He appears to have won some victories over them, but by no means to have broken their strength, for his son Rameses II. was unable to conquer them. Rameses II. was unable to conquer them. The H. king. Mauthnuro, collected a vast army and prepared for a final struggle with Egypt for the possession of N. Syria. Rameses II. marched N. with his ormy, and a great battle was fought in the fields of Kadesh which ended in the victory of neither. After this a treaty was arranged, and the two kings formed an alliance, which seems to have been very necessary,



THE DEFEAT OF THE HITTITES AT THE BATTLE OF KADESH

against some other unnamed enemy, probably Assyria, who appears at this time as a growing danger. Trouble was also threatening from the Mediterranean— the islands were restless'—so these two great empires allied themselves for mutual protection. This is a very early example of an international agreement. Some years later this newly-formed friendship was cemented by Rameses matrying a H. years later this newly-formed friendship was cemented by Rameses marrying a H. princess. In Assyrian references, the H. (whom they call Khatti) appear as a powerful people, occupying Carchemish on the Euphrates. Sargon III., in 717 B.C., left records of how he finally overthrew the Khatti of Carchemish, and captured their king, Pisiris.

From all these records, and from the discoveries of archeologists, we gather a brief hist, of the H.

White Syrians, or Hatti, were found in Cappadocia, after the Cimmerians had destroyed Phrygia. Crossus, king of Lydia, defeated what remained of them. Boghaz Kesi formerly Pteria, is the only

surrounded the whole city. Many inscriptions and sculptured reliefs were found, and a number of tablets in Babylonian and in the H. language, among them a cunsiform copy of the treaty with Rameses II. Euyuk possesses remains of a large palace entered between sphinxes, a large paince entered netween spinitives, on one of which is sculptured a relief of a double-headed eagle; this device is said, without definite proof, to have been adopted by the Sejiuk Suitans of Konia, and to have been brought by the crusaders to Europe, where it was taken by the Ger. emperors as their arms. In various places, widely distributed, fragments of places, when distributed, fragments or pottery, sculptured lions, reliefs, and buildings have been discovered; in some of the buildings columns rested on bases

or the outlangs columns rested on bases carved with winged lions.

The style of all their sculptures is quite individual and easily distinguished from the Assyrian and Babylonian art. The facial type is very markedly non-Semitic, the figures are usually depicted short and the ngures are usually depicted short and heavily built, with prominent bones, broad-shaped heads, receding forcheads, long noses, thick lips, and short chins. The hair of the men is frequently worn in a pig-tail. The dress usually represented The hair of the men is request.

a pig-tail. The dress usually represented consists of a long robe worn over a tunic, a high conical cap, and long boots turned up at the toes. The outer robe was bordered with a fringe. The females wore a long veil or shawl covering the head and forehead and falling to the feet: one relief pictures two ii. women sitting to gother with this veil or mantle draped over a head-dress resembling a modern brimless top hat. Very little can be said by a head-trees resembling a modern brimless top hat. Very little can be said with certainty of their social conditions; one thing is clear, that their women enjoyed the same high status and freedom as in Babylonia. They appear to have adopted the Babylonian cult of the godadopted the Babyionian cuit of the god-dess listar (Ashtoreth); she is depicted in the sculptures of Boghaz Keul with a mural crown; the H. may have introduced her worship to Lydia where she became known as Cybele, 'the Great Mother of the Gods.' The bee was sacred to her, and a H. gem, found at Aleppo, represents her standing on a bee. Her priestesses who served her in Lydia are represented bearing a double axe, a symbol found frequently at Knossus in Crete. The Lydians, who were among the first to use coined money, employed the silver 'Mina' of Carchemish, i.e. a H. silver coin.

A new and possibly decisive stop to-wards deciphering the Hittite hieroglyphs powerful people, occupying Carchemish on the Euphrates. Sargon III., in 717 B.c., left records of how he finally overthrew the Khatti of Carchemish, and captured their king, Pisiris.

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White Syrians, or Hatti, were found in Cappadocia, after the Cimmerians had destroyed Phrygia. Crossus, king of Lydia, defeated what remained of them. Boghaz Kesi formerly Pteria, is the only H. city that has been really thoroughly to timmense size. The acropolis was strongly fortified, and a wall 14 ft. thick on a stone base with two bulis led by a female figure. Whole panels of the walls were covered with inscriptions, which were continued on the statue itself and on the sides of the bulls. It was found that the inscriptions on the walls were bilingual, those on the panels on the left of the entrance being in old Phenician and those on the right in Hittite hieroglyphs. They are dated about 730 s.c. The hope that by comparing the two texts one might decipher the hieroglyphs was strengthened when Prof. Bossert found the phonette rendering of the name of the city strengthened when Prof. Bossert found the phonetic rendering of the name of the city of Adana which figures in both texts. Since then he and other philologists have continued research work on the twin texts, and it is claimed that about one-third of the whole text of these hieroglyphic inscriptions has been deciphered. In the past some philologists had succeeded in reading the series of some hierogeneous products and the control of the series of some hierogeneous products. In the past some philologists had succeeded in reading the sense of some hieroglyphic ideograms, but no key had been found to the language represented by Hittite hieroglyphs, which was assumed to be a language of Indo-European origin. Prof. Bossert's discovery may provide the missing key to this part of the early hist. of Asia Minor. Hittite cuneiforms found earlier at Bogaz-Koy (Boghaz Keni: earlier at Bogaz-Koy (Boghaz Keul; anct. Hattushah) dealt with a period be-tween the fifteenth and twelfth centuries B.C., at which later date the cap. of the Hittite empire was destroyed by invaders. The hieroglyphs are beheved to describe events of a later period until about the sixth century n.c. and their deciphering sixth contury B.C. and their deciphering should yield information on historical and religious events and developments during the intervening six centuries. (Times, April 20, 1949.) Consult W. Wright, Empire of the Hillies, 1884; A. H. Sayoe, The Hithites, 1890; L. Messerschmidt, The Hittiles (trans. by J. Hutchison), 1903; D. G. Hogarth, Ionia and the East, 1909. Hittile Problems and the Excavations of Carchemish, 1912, Hittile Seals, 1920, and King of the Hittiles, 1926; J. Garstang, Land of the Hittiles, 1910, and The Hittiles, 1920, and Date of the Hittile Hittie Hittie Highlightons of Carchemish, 1928. L. A. Mayor, Index of Hittile Names, 1923, J. R. Harris, Further Traces of Hittile Migration, 1927; G. A. Barton, Hittle Minual for Heginners, 1928; H. H. von der Oston, Explorations in Hittie Asia Musor, 1929; G. Hennig, History and Language of the Hitties, 1931; L. J. Gelb, Hittie Hittles, 1936.
Hittof. Johann Wilhalm (1824-1014) should yield information on historical and

Hittles, 1936,
Hittori, Johann Wilhelm (1824-1914),
Ger. physicist, b. at Bonn. At Munster

exercised by a magnet on the rays proceeding from the cathode. H. investiceeding from the cathode. H. investi-gated allotropic forms of selenium and phosphorus—producing black crystals of the latter. He contributed many papers to Poggendorff and Wiedemann's An-nalen der Physik. A famous one, Über die Wanderung der Ionen während der hiektrolyse, was trans. into Eng. 1899. Hivites, one of the Canaanite tribes or races who were expelled by the Israelites

hieldrolyse, was trans. into Eng. 1899.
Hivites, one of the Canaanite tribes or races who were expelled by the Israelites when entering Palestine under Joshua (Jo. xxiv. 11). They seem to have dwelt in Central Palestine; e.g. Gibeon (Jo. ix. 7) and Shechem (Gen. xxxiii. 18) were cities. The origin of the name is in doubt, but the suggestion that it simply means 'villager' is inconsistent with their dwelling in the above mentioned cities. A remnant of their descendants survived until the time of Solomon (I Kings x.). Hjörring, anct. city of Denmark in the N. of Jutland, 7 m. from Jammer Bay. It is the cap. of H. co. ('amt'), and is on the Jutland Rallway Pop. 11,000.
Hkamti Long, collection of seven Shan states controlled by Burma, and bounded northward by the Mishmi region, E. and S. by various Chingpaw (or Kachin) communities, and westward by the Hukawng valley. The estimated area and pop. of this little-knewn country are 200 sq. m. and 8000 respectively.

and 8000 respectively.

Hlassa, see LHASA.

Hoadly, Benjamin (1676–1761), Eng.
divine, graduated as M.A. from Catherine Hall, Cambridge, and, after holding sev. minor livings, became in turn bishop of isangor (1715). Hereford, Salisbury, and Winchester (1734). An ominent theological controversialist, he stoutly aphelithe destrines that the church is subject to the jurisdiction of the civil magistrate, and that its authority does not extend to and that its authority does not extend to and that its athority does not extend the individual conscience. The first is expounded in his Measures of Submission to the Civil Magistrate, etc., and the second his celebrated sermon on the 'Kingdom of Christ,' which gave rise to the Bangor-ndispute and agreemented and disof Christ,' which gave rise to the Bangoruan dispute, and so exasperated and disorganised the lower house of convocation
that to this day it has never been allowed
to despatch any but formal business. H.
anticipated many of the modern Unitarian views, and in his own day was both
praised and blamed as a latitudinarian
and as a rationalist. His works were ed.,
with a life, b. J. Hoadly (1773).
Hoang-Hai, see Yellow Sea.
Hoang-Ho, o 1 Hwang-Ho, see Yellow
River.

RIVER.

Hoars-Laval Pact, pact signed by Brit. and Fr. representatives in 1935 in the hope Ger. physicist, b. at Bonn. At Munster of settling the condict between Italy and house of settling the condict between Italy and Abyssinia. Abyssinia, which was being in 1852-79 and director of physical laboratories from 1879-89. Resigned on account of ill-health; but, having recuperated, continued his labours. In 1862, H. and Pitcker discovered the influence of temp. on the spectra of substances. In the Mediterranean the members of the League could have assembled naval forces, with secure bases, easily sufficient to cope with Italy if the need 1869, H. performed experiments in relation to the passage of electricity through rarefied gases (which later led to the Crookes Tube and Röntgen Rays)—noticing, inter alia, the deflective influence to cut the communications between Italy and E. Africa. At Geneva 50 States aligned themselves against Italy; only 3—Austria, Hungary, and Albania—supported her. Certain economic sanctions had been agreed upon and applied. All that was necessary was that they should be extended to the supply of oil to make it impossible for Italy to wage effective war. There was good reason to believe that the United States would take part in such an embargo. But at that moment the Fr. gov. wavered: the sinister figure of Laval (q.v.) had omerged in control. Then the Brit. gov. of Mr. Baldwin weakened. In Dec. 1935, without any consultation with the League, the H. agreement was signed. Instead of pressing home the economic measures against Italy, it was Abyssinia that was to be ing nome the economic measures against Italy, it was Abyssinia that was to be constrained. Under the Pact she was to be called upon to surrender almost half her ter. with the sure prospect that the rest would be taken at the next opportunity. A storm of protest burst in Britain and France. Sir Samuel Hoare (foreign secretary) resigned. Layel was (foreign secretary) resigned; Laval was dismissed from his premiership. The Council of the League refused even to consider the proposals of the Pact. But the mischief had been done. From that mischief had been done. From that moment the heart was taken out of the League of Nations. Its moral authority disappeared. After a few months the sanctions against Italy were formally ended. The It. campaign, aided by poison gas, was pushed to a victorious end: and it was not long before the next Brit. Prime Minister, Mr. Neville Chambertities Users, was read at header lain, visiting Rome, proposed at a banquet the toast of 'The king of Italy, emperor of Ethiopia.'

Hoare, Sir Samuel John Gurney, see

TEMPLEWOOD, VISCOUNT.
Hoar-frost adorns trees, grass, and twigs in winter, because they freely radiate their heat. The cause of its formation is as follows: On a clear night formation is as follows: On a clear night dew is deposited because after sunset the earth cools and lowers the temp. of the atmosphere in contact, until its moisture begins to condense. This it will do as soon as the temp. has fallen below that



HOATZIN

point at which the air would just be saturated by the amount of aqueous vapour which happens to be present. Now H., instead of dew, is precipitated when at the time of its formation the temp, is already below freezing-point (32° F. or 0° C.). It is therefore not frozen dew, as such an expression would imply that the vapour was first of all deposited as dew, but rather water directly deposited in a solid form. If the dow-point is below 32° F., gardeners should screen young or delicate plants from the atmosphere, as there is every likelihood of a H. likelihood of a H.

Hoarseness, condition of the voice in which the sound is diminished in intensity and purity; it is usually accompanied by a feeling of pain or undue effort in pro-ducing sounds. H. is caused by the swelling or roughness of the vocal chords, the vibration of which causes the sound which we know as voice. It is possible that the roughness of these ligaments is sometimes due to fatigue or lack of tone in the muscles and nerves controlling them, but in the majority of cases there is them, but in the majority of cases there is definite inflammation of the mucous membrane of the larynx. H. is therefore usually indicative of some form of laryngitis, and should never be neglected. Inflammation may be set up as the effect of irritating vapours or dust, or as the result of a cold extended downwards from the nose or throat; it may be induced by fatigue through excessive use of the voice, or may accompany some of the voice, or may accompany some other disease, such as influenza. The swelling of the parts which interferes with normal voice-production may progress so as to constitute a danger to respiration. An attack of H. should therefore be construed as a symptom of laryngitis. Neglected H., particularly if associated with excessive use of the voice, may lead to a chronic condition in which a certain amount of inflammation is always present, amount of inflammation is always present, and a more or loss permanent change in the constitution of the pharyngeal membrane may take place. The treatment for laryngitis is rest in bed, inhalations of friar's balsam (a teaspoonful to a pint of hot water and the steam inhaled), cold or hot fomentations to the throat, and aspirin in small doses internally. Chronic laryngitis demands examinations of the laryng by a dector who is accustomed to larynx by a doctor who is accustomed to use a laryngoscope. The first essential in its treatment is rost for the voice, and sometimes silence must be maintained for a prolonged period. A simple alkaline douche, which clears a blocked nose, may he very helpful in this condition, but application of oily or astringent prepara-tions to the larynx may be necessary. This, however, requires the skilled hand of a surgeon.

of a surgeon.

Hoar-stones, called Hare Stanes in Scotland. They are single blocks of unhewn stone, which now serve the purpose of boundaries, but which must at one time have been commemorative. Usually they stand alone, though rarely a ring is indicated by pieces of rock clearly arranged by human agency.

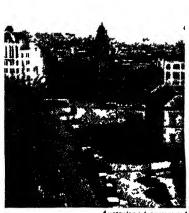
Hoatzin, or Hoazin, name given to the

galliform birds belonging to the family Opisthocomidæ, which consists of the single genus and species, Opisthocomis crisiaus. They are fowl-like in appearance and about the size of a pigeon, the plumage is olive with white markings, and reddish underneath, the sternum has a large patch of thick maked skip on which the large patch of thick, naked skin, on which the ising paternoi timer, naked skin, onwhich the bird generally rests They are chiefly arbor-eal, nesting on low trees or shrubs, but are also able to swim and divo The H., which ranges from Guinca to Venezuela, is also called the state bird, or stinking-pheasant, because of its strong, musky odour

Hoazin, see Hoazin, musky odour Hoazin, see Hoazin, musky odour Hoazin, see Hoazin, Ho built Incre are numerous saw and flour mills, iron foundries, and potteries, etc The Australian Newsprint Mills and the Electrolytic Z: Works are estab in the vicinity. There are important industrics dealing with the processing of small fruits apples, and pears H is the see of an Anglican bishop and a Rom Catholic archishop, and possesses many fine success parks. archiehop, and possesses many fine squares, parks, and buildings, among which the univ, the hall, and 5t Mary's Cathedral deserve especial note, and also a statue of the explorer, Franklin, who was governor here from 1837 to 1843 Here, too, are parliament buildings Pop 70,000 See Isabel Dick, Wild Orchard 1916, F Hurley, Garden of Tasmana, 1947 and C Barrett, Isle of Mountains, 1948 Hobart Pasha, Augustus Charles Hobart-Hampden (1822-86) admitted the Turk ish fleet, the son of the earl of Buckingham

Hampoon (1227-00) admired to the like higher, the son of the earl of Buckingham shire. Having won his captainty in the lang navy, he refired in 1862. As block ade runner during the Amer Civil war, he gained considerable distinction, but his daring and strategic ability were most in evidence during his blockade of Crete at the time of the insurrection, and during the Russo-lurkish war (1878), when he cleared the Black sea of the enemy I had entered the Turkish navy in 1867 Hobberna, Meindert (1638-1709), Dutch

landscape painter, was a contemporary of Berchem Van de Velde, and Wouver man, who sometunes inscried animals and man, who sometimes inserted animals and figures in his pictures. Save that he married, died in poverty like Rembrandt Hals, and Jacob Ruysdale, and was buried in the pauper section of an Amsterdam in the pauper section of an Amsterdam in the married, little has survived either about his personality or life. In this country he is honoured chiefly for his "Avenue at Middelharnis" 1689 (National Gallery, London), but his masterpieces are scattered over the museums of Antwerp, Brussels, Leningrad, Dresden, Rotterdam, etc. H. Malmesbury, April 5. He graduated at



Australian Government

HOBART

Flizzbeth Street, the main shopping centre of the city from Franklin Square. I ackng the square is the Iown Hall and in the opposite corner is the General Post Othre

was content to print his native woods and mills, hedgerows and pools, winding tracks and leafy cottages, but his manipulation of cloud and light, the truth and finish of his varied foliage, and the sympathy with which he expresses nature in her moods of tender melancholy and puritant calm, prove him the equal of Ruysdael in all except the broadness of his range. See monographs by W von Bode 1917, and G Broulhiet, 1958

G Broulhiet, 1958
Hobbes, John Oliver (pen-name of Mrs. Pearl Mary Theresa Craigie, nee Richards) (1867-1906) Amer novelist, made an unitypy marriage (18%), which was dissolved on her petition in 1891 Reared in an atmosphere of Nonconformity she entered the Rom Catholic Church in 1892, with the most all philosophy which as entend the Rom (atholic Church in 1802, and that mystra ip philosophy which so pervades The School for Saints (1897) and its sequel, Robert Orange (1900), was assuredly the cause or effect of this conversion. Her positive gentus for epigram is conspicuous in her first pub., Some I motions and a Moral (1891), and likewise in her Low and the Soul Hunters (1902).

Magdalen College, Oxford, and between 1610 and 1637 thrice went abroad as private tutor with the Cavendish family, 1610 and 1637 thrice wont abroad as private tutor with the Cavendish family, visiting France and Italy, where he made the acquaintance of the Cartesian Father Mersenne and of Galilco. Many other illustrious men, including Hen Jonson, Bacon, Lord Herbert of Cherbury, and, among foreigners, Descartes and Cosimo de' Medici were counted among his friends. His political principles were fundamentally opposed to those of the Long Parliament and from 1640 to 1652 he lived in France lest his opinions, mostly expressed in works then only in MS., should attract hostile attention. The plan of his philosophic work had already been formed and it was in this period that most of his works appeared. When his unorthodox opinions, particularly his ideas on religion, brought him into collision with the Church and the exiled court, he returned to England, submitted to the council of state and finally went into retirement in Hardwick, where he wrote a retirement in Hardwick, where he wrote a trans. of the *Iliad* and the *Cdyssey* (1676), *Bekemoth* (1680), and an autobiography in verse. For some time he was mathematical tutor to the Prince of Wales (afterwards Charles II.), and though, after the issue of the Leviathan (1651), his pupil issue of the Leviathan (1651), his pupil forbade him his presence, yet the pension he freely gave to H. on his accession (1660) showed that he knew no other feelings than gratitude and respect for his former teacher. The Honeric and Thucydidean trans., and likewise the many controversial writings of the philosopher, which at the time loomed so important, have long been condemned to the dust of oblivion; his Behemuth, or narrative of the Civil war (1640-60), is now a curiosity in literature. But his De Cive (1642 and 1647), and his magnum opus, the Leviathan. both of which were censured by parliatoer, and his magnum opus, the Levidhan, both of which were censured by parliament in 1666, gave 'an extraordinary inpulse to the spirit of free inquiry in Europe' and have won for their author the title of founder of political science, as other of his works take him the true father of Eng. psychology. In 1640 he wrote a treatise in defence of the royal prerogative. H., who was besides a great stylist and one of the first to deen his prefixe language worthy of convesting native language worthy of expressing abstruse thought, taught that the end of abstrues thought, taught that the end of philosophy was social, and that theology and transcendentellsm did not come within its sphere; that the basis of all gov. is force and that, whereas to be effectual every gov. must be supreme the spiritual must ever give way to the spiritual must ever give way to the temporal, and the people must implicitly accept not merely the laws but the mode of faith which the king or his ministers have seen fit to ordain. Hobbes, like Bacon, asserts the practical value of knowledge and concentrates attention on nature and man to the exclusion of the supernatural; but he differs from Bacon on the rappropriate method of inquiry. Bacon regarded induction as the chief means of investigation, whereas H. held that the deficiency or synthetic method was superior to the analytic and, deeply impressed by the logical demonstrations of Euclid's Ele-

ments which he saw for the first time at the age of forty, always adopted the mathematical demonstration of his philosophic truths. He was fundamentally a materialist, seeking the basis of all knowmaterialist, seeking the basis of all know-ledge in sensation, and froju this material or mechanical conception of nature and man, he deduced his whole system of natural and civil philosophy. The latter, presented in his *Leviathan*, is the study in which his thought has had its most pro-found effect. The ethical and political philosophy of *Leviathan* may be briefly summarised: man in a state of nature is entirely notivated by appetite and desire and since all men are engaged in the attainand since all men are engaged in the attainment of their own objects of desire, altru-ism (a word, however, only invented by Herbert Spencer) has no place in their original nature—with the result that man's natural state is one of strife, enmity and war. Hence man must find a renedy by agreeing with his fellows to submit to a stronger power, and thus a commonwealth is estab, on the implied basis of a mutual covenant—a concept analogous to Rousseau's contrat social, except that Il's view of the natural man as a cept that It's view of the natural man as a selfish being is remote from the ideal of Rousseau. See monographs by G. C. Robertson, 1886; Sr L. Stephen, 1904; A. E. Taylor, 1908; G. Catlin, 1922; and J. Laird, 1934.

J. Lard, 1934.
Hobbs, John Berry ('Jack'), (b. 1882)
Eng. cricketer; b. at ('ambridge'; eldest
of twelve children of John C. Hobbs
(d. 1902), professional cricketer on the
ground-staff at Fenner's. As a boy, H.
dirst batted in Jesus College Close with first batted in Jesus College Close with choir-boys of that college. As an anatour H. played for Cambridge. His first century was scored when he played for Ainsworth against Cambridge Liberals. This was in 1901: and in a charity match the same year his opponents included T. Hayward, who failed to bowl him out. In 1902 he was engaged professionally at Hadford firangements school. The segments Hedford Grammar School. The same year he returned to Cambridge as a professional. Through the influence of F. G. Hutt, he was tried at Kennington Oval, and taken on by the Surrey Club, April 23, 1903. He played for Cambridgeshire (2nd leas) in 1904, wast by the class) in 1904; and in 1905 went into the Surrey co. team—for them he scored 155 against Essex that year. Thonceforth he was continually in the cyc of the cricketing world. With Sandham, made 428, for first wicket for Surrey, June 25, 1926—then a first wicket for Surrey, June 26,

London Star.

London Star.

Hobby, or Falco sublueto, longwinged, short-tailed falcon, dull grey above and mottled underneath, which visits Britain in the summer, especially the S.-E. co's. In length the female bird, which is somewhat larger than the male, is 14 in Larks are its favourite prey, but it has been known to feed on insects. Falconers once trained hobbles for the burn.

once trained hobbles for the hunt.

Hobgoblin, see GOBLIN. Hobhouse, John Cam, Baron Broughton (1786-1869), Eng. statesman, was educated at Westminster School and at Trinity College, Cambridge. His inti-macy with Byron began in his undergraduate days and endured till the latter's death. Thus he was 'best man at the poet's wedding, wrote the historical notes to the fourth canto of Childe Harold, notes to the fourth canto of Childe Harold, and in his company visited Portugal, Spain, Italy, and Switzerland. He began his political ca. "r as Radical M.P. for Westminster, having been already in Newgate for a satirical pamphlet pub. anonymously. But when in 1846 he sat in Russell's cabinet as president of the (Indian) Board of Control he was regarded as a reactionary by the younger Bedicals. as a reactionary by the younger Radicals. The activities of the Gk. committee in London (1824) were largely the result of his cuthusiasm. See M. Joyce, Mu Friend II 1948.

Friend II 1948.

Hobhouse, Leonard Trelawny (1864-1929), Eng. seconologist and philosopher; son of Reginald II., archdeacon of Bodinin. Fellow of Merton College, Oxford, 1887; assistant tutor, Corpus Christi, 1890—Fellow 1894. On edutorial staff of: Manchester Guardian, 1897-1902; Trilume, 1906-07. Sec., Free Trade Union, 1903-1905. His philosophy, a dualism called Conditional Teleology, infers a correlating principle striving toward a universal harmony that can apparently never be complete. Works include The Labour Movement (1893), The Theory of Knowledge (1898), Mind in Evolution (1901), Lord Hobhouse: a Memoir (with J. L. Hammond, 1905), Mords in Evolution (1904), Lord Hobhouse: a Memoir (with J. L. Hammond, 1905), Mords in Evolution (1906), Mords in Evolution (1907), Elements of Social Justice (1921), Elements of So Hobhouse, Leonard Trelawny (1861-

pertnership for England v. Australia at Melbourse in 1911-12; with Sutcliffe, irst wicket record parinership in Tests against S. Africa, 268 at Lords in 1924: thrives. Two important buildings are took part in 168 partnerships of three figures for the first wicket; made two separate hundreds in a match on six occasions: 16 hundreds during one season—1925. His highest innings was 316 not out, v. Middleyex. Pub. sev. books and wrote cricketing news for the London Star. here. Pencile, silk and leather goods, etc., are manufactured, and the coal industry thrives. Two important buildings are Stevens Institute of Technology (1871) and the Hoboken Academy, founded in 1860 by the Gers., who to-day make up one-fifth of the entire pop. Pop. 50,100. (2) suburb of Antwerp, Belgium. It is situated on the Scheldt, 3 ns. S.W. of the city, and has the most important shipbuilding yards of the country, also manufactor in the city of the contry, also manufactor in the control of silver-ware, woollen goods and sugar, and iron foundries and breweries. I'op. 31.700.

11,700.

Hobson-Johson, corruption of Ya Husan! Ya Hosain, the cry of the Shiites during the procession of Mohurram, which is pail of one of the great Moslem fastivals. It originated from Brit soldiers in India, who thus colloquially described the celebration. Yule and Burnell used it as the of their Anglo-Indian glossary title (1886).

Hobson, Thomas, Cambridge jobmaster, who let out horses on hire, the choice always being limited to the one next the door, the one that had been longest in, hence the saying 'Hobson's choice.' He was the subject of two humorous epitaphs by Milton.

Hoccieve, or Occieve, Thomas (c. 1370-c. 1450), Early Eng. poet and lawyer, a clerk in the Privy Seal Office, London, for over twenty years. He knew Chancer, the floure of eloquence and his 'maister dere,' drawing in colours the well-known portrait on the margin of one of the MSS. of his chief poom De Regimine Principum of his chief poom De Regimine transipum (c. 1411), largely compiled from the Lat. of Ægidius Colonna (c. 1280). Other poems were: The Shiry of Jonathan, and Moder Jod. . . . See Dr. E. Furnivall's cd. of Works, 1892; De Regimine, 1897; W. Mason's ed. of six poems, 1706: T. Wright's ed., 1860 (Royburghe Club); Philipps MS. 8151 (at Cheltenham) (which contains his account of his disordered life); Il Morley, English II gitzes (vol. vi.

Höchst, tn. of Hesse on R. Main, 10 m. W. of Frankfurt of which it has been a part since 1925. Tilly defeated Christian of Brunswick here, 1622. Noted for chemical industries (I. G. Farben) and the manuf. of tobacco, beer, machinery, and furniture. Pop 35,000.

Höchstadt, tn. of Swabia, Bavaria, Germany, on R. Danube, 30 m N.E. of Ulm. Here Frederick of Stauffen was defeated by Hermann of Luxemburg, 1081, and the Austrians by Marshal Villars, 1703 The victory won by Marlborough and Prince Eugene over the play usually very rough in character. Modern H. is played on turf during the same time as football—from Sept. to April; it owes much of its present vogue Franco-Bavarian forces in 1704, fought nearby, is better known as the battle of Rienheim Pop. 2000.



Fox Photos

HOCKEY The Universities inside left makes a shot in a match against the Weasels

Hock, strictly the white wine (sparkling) 1883 still obtain in essentials or still), called in Germany 'Hoc hheiner,' produced at Hochheim The high name 'hock' has been in use since before 1625, and is commercially extended ilmost in-discriminately to light white Ger wines, especially Rhenish wines. If is usually dry, but some brands are sweet It has a distinctive flavour and bouquet and the alcoholic strength is from 9 to 13 per cent Important bruds are, Erbach, Nierstein Rudesheim, Marcobrunn (still) Johan-nisberg, Licbfraumich, Raucnthal (spark-ling). Good vintages were those of 1880, 1883, 1884, 1886, 1889, 1892, 1893, 1995, 1897, 1921, 1925, and 1929. The natural dry white wines of the Californian 'Riesling' or hock-grape slightly re-semble the Ger varieties, but generally have more 'body' and are less acid Hockey (possibly derived from the 'hooked stick' with which the game is played; cf. haguet, O.F. for shepherd's erook), game prayed with a ball or some similar object between two opposing sides; the stick used to propel the ball alcoholic strength is from 9 to 13 per cent

the equipment and tools of a H player the following are the more important points A H stick shall have a flat face on its left hand side only there are no regulation as to length, but every stick must be of such size that it can be passed through a two inch ring. The head of a strck shall not be edged with or have insets or fittings of hard wood or of any other substance nor shall there be any sharp edges or dangerous splinters; the extremity of the stick must not be out square or pointed but must have rounded edges An india rubber ring of four inches external diameter may be used as a guard, but the total weight of the stick a guard, but the total weight of the stick and guard and binding, if any, must not exceed 28 or The ball is a leather cricket ball, either, painted white or made of white leather Boots very similar to football boots are usually worn; no dangerous materials such as spikes or nails, etc., must be worn. The rubber ring is not now much used, padded gloves being worn instead. Ship, guards are from the worn instead. Shin-guards are, from the

nature of the game, almost a necessity. The ground for H. is of a rectangular shape, 100 yds. long and not more than 60 yds. nor less than 65 yds. wide. The ground is marked out with white lines, of which the longer are called the side-lines and the slower the coal-lines. and the shorter the goal-lines. Flag-posts are placed at each corner, and at the centre of each side-line, one yard outside the line. The goals are in the centre of the goal-line; The goals are in the centre of the goal-line; their dimensions are 12 ft. wide by 7 ft. high. The posts are 2 in. broad and not more than 3 in. in depth. Nots are attached to the posts, cross-bars, and to the ground behind the goals. No shooting at goal can take place except in the striking circle, which is thus defined: In front of each goal shall be drawn a white line 4 yds. long, parallel to and 15 yds. from the goal-line. This line shall be continued each way to meet the goal line by quarter circles having the goal-posts as centres. The game is played between two teams of eleven players each, positwo teams of eleven players each, posi-tioned as in association football. The game is started by one player of each team bullying the ball in the centre of the ground. To bully the ball, each player strikes the ground on his own side player surises the ground on ins own side of the ball, and his opponent's stick over the ball, three times alternately; after which one of them must strike the ball and so put it in play. In all bullies the two players who are bullying shall stand squarely facing the side-lines. A player is offside if he is nearer to his opponent's is offside if he is nearer to his opponent; goal-line than the person who last struck or rolled the ball in, unless there be at least three of his opponents nearer to their own goal-line than he is. No player can be offside in his own half of the ground, nor if the ball was lost touched or hit by one of his opponents. The penalty for off-side is a free hit. When a player strikes at the ball no part of his stick must in any event rise above his stick must in any event rise above his shoulders at either the beginning or the end of the stroke; the penalty for 'sticks,' as it is called, is a bully. In the case of breaches of the rules inside the circles a 'penalty bully,' or a 'penalty corner,' is awarded. When a penalty bully it played all players save the true corner, is awarded. When a penalty bully is played, all players, save the two taking the bully, shall remain beyond the nearer 25 yds. line in the field of play until the bully is completed. When a penalty corner is awarded, the player taking it shall have a hit from any part of the goal-line he may choose, at least 10 yds. from the nearest goal-post. At the moment of such hit all the defending team wast he behind their own goal-line and must be behind their own goal-line, and all the attacking team must be out-ide the an the abbusing team mist be outside the striking circle in the field of play. A corner differs from a penalty corner only in that the hit is taken from a point within 3 yds. of the nearest corner fiag. The game is in charge of two umpires, who each have charge of half of the field who each have charge of half of the field 1878 with a story Her Benny, and many of play; if two unpires are not available one umpire and two linesmen take their place. Since 1895 International Matches between England, Scotland, Iroland, and between England, Scotland, Iroland, and Wales have been played, and Belgium (1878). The Awakening of Anthony Weir and France now play England. There is (1901), Plemeers (1905), The Third Man an international championship, and H. is (1911), When He Came to Himself (1915),

one of the events in the Olympic Games. Co. matches are also played and Div. Association matches.

Association matches.

In America ice H. is so popular that the term 'hockey' is used for that variety, and the other game is called field H. The game differs from Eng. ice H. in sev. respects (see ICE HOCKEY).

Ice polo is a game very similar to ice H., played almost exclusively in the New England states. It is played with a rubber-covered ball and a heavier stick. Five men only play on a side and there is rubber-covered ball and a heavier stick. Five men only play on a side, and there is no offside rule. The rink is 150 ft. in length. Ring H. is a variety of H. which can be played on the floor of any gymnasium or large room. The goals are 3 ft. high and 4 ft. in width; six men are on a side, a goal-kooper, a quarter, three forwards and a centre. A ring of 5 in. diameter, with a 3-in. hole in the middle, and weighing from 12 to 16 oz., is used instead of a ball. The stick is a light but tough wand, from 36 to 40 in. in length, 1 in. in dlameter, and with a 5-in. guard at a distance of 20 in. from the lower end. The end of the stick is inserted into the hole in the ring; a goal from the field counts 1 point, and from a foul, ½ point. Roller polo is an adaptation of ice polo to roller skating rinks, and is very popular roller skating rinks, and is very popular in the U.S.A. Flve players form a side. See E. E. White, The Horkey Player, 1909; E. H. Green and E. E. White, Hockey, 1912; M. Pollard, Hockey for Women, 1931; E. Green, The Arts of Hockey, 1931; E. Ricketts, Hockey Manual for Umpires and Players, 1932; P. Robson, A Manual of Hockey, 1934; D.S. Milford, Hockey, 1938; T. S. Dagy, Hockey in Ireland, 1945.

Hocking, Joseph (1855–1937) Eng. novelist, b. in Cornwall, younger brother of Silas K. H. (q.v.). Educated at Owen-College, Manchester, and became a land-surveyor in 1878; but left this profession roller skating rinks, and is very popular

of Silas R. H. (G.T.). Educated at Owen-College, Manchester, and became a land-surveyor in 1878: but left this profession in 1884 and entered the Nonconformis ministry (United Methodist Free Church)—for the noxt few years travelling in Egypt, Palostine, Greece, Turkey, and Syria. His pubs include:—Jabez Easterbrook (1891), Story of Andrew Fairfax (1893), Fields of Faur Lenour (1896, The Scartet Women (1899, which caused some stir in Free Church Circles), The Purple Robe (1900), The Trampled Cross (1907), God and Mammon (1912), The Purple Robe (1900), The Eterna Challenge (1929) Out of the Depins (1930), The Squire of Jabuloc (1935), Deep Calleth Deep (1936).
Hocking, Silas Kitto (1850-1935), Eng. novelist, b. at St. Stephen's, Cornwall; third son of James H. Educated for the ministry of the limited Methodist Free Church and ordained minister in 1870. He Renny, and many others followed: nost of them better returned.

1878 with a story Her Benny, and many others followed, most of them being very

rural England. The derivation is uncertain; the term hock-day was in use by the tweifth century. The chief pastime was that of 'binding' members of the opposite sex (men on Monday, women on Tuesday) till a small payment was made for release. The money was used for church or par. purposes. 'The Old Coventry Play of Hock-Tuesday' was revived on Elizabeth's visit to Kenilworth (1575). See J. Brand, Popular Antiquities, 1777; W. Hone, Every-day Book, i., 1826. i., 1826.

Hoddesdon, par. and vil. of Hertfordhire, England, 4 m. S.E. of Hertford, 14 m. from Broxbourne Junction. Izaak Walton used to fish here on the R. Lea, whose waters fill the most of the old Rye whose waters fill the moat of the old Rye House I m, away, where, had the plot not gone astray, Charles II. and his brother James would have been assassinated in 1683. II. was a coaching station on the Old North Road. Pop. 7040. Hodeida, Hodaida, or Hodidah, fort and seaport of the Yemen, Arabia, on the E. coast of the Red Sea, 100 m. from Mocha. A barbour is to be built at Bas-al-Ketib.

A harbour is to be built at Ras-el-Ketib, 10 m. away. A railway connects H., Ras-cl-Ketib, Sana's, and Amran. The chief exports are: Coffee, skins, cotton, and some pearls, senna, myrrh, sesame, and jowari (a kind of millet). Other grains are imported. H. was bombarded grains are imported. H. was bombarded and occupied by the Brit. in 1918. Pop.

Hodgkin, Thomas (1831-1913), Brit. historian, b. in London, of a Quaker family. After graduating at the London Univ. he entered business as a banker, at the same time applying himself to historical study, and soon becoming a leading authority on the hist. of the early Middle Ages. His chief works are: Italy and Her Invaders (8 vols., 1880-99), The Dynasty of Theodosius (1889), Theodoric the Goth (1891), Life of Charles the Great (1897), and vol. i. of Longmans' Political Misters of Maddle (1908)

History of England (1906).

Hodgson, Brian Houghton (1800-94),
Eng. Orientalist, entered the E. India Company's College at Halleybury, 1816, becoming a servant of the company, 1818, the was resident in Nepal, 1820-43, returning to England, 1858. II. wrote to was resident in Nepal, 1820–43, returning to England, 1858. II. wrote valuable papers on the ethnology, languages, and zoology of Nepal and Tibet, including Miscellaneous Essuys on Indian Subjects (1886). The libraries of London, Design 1980 of the resident of the subject Paris, and Calcutta have his collections of Oriental MSS. See life by Sir W. Hunter,

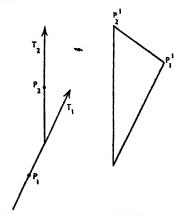
Watchers in the Dawn (1920), My Book of Memory (1923), The Mystery Man (1930), Gerry Storm (1934).

Hocktide, formerly a popular festival in England, kept on the second Monday and Mondaelmas were the rent-days in rural England. The derivation is uncertain; the term hock-day was in use by the tweifth century. The chief pastime was that of 'binding' members of sine as any in the language, notably The Last Blackbird, which appeared in 1907. as the as any in the singuage, notatily face Last Blackbird, which appeared in 1907. His longest and most clusive poem, The Song of Honour, is a piece of virtuosity in degree metre; his Ere is notable for its word-colour, and The Gypsy Gril a short but the butter of the state of the same than the same than the same that the same than th but striking dramatic poem. His *Poems* were pub. in 1917. Sev. of his poems appear in *Georgian Poetry*, 1911–17 (3 parts), ed. by Sir Edward Marsh. Awarded Polignac Prize.

Polignac Prize.
Hodgson, Shadworth Hollway (1832–1912), Eng. metaphysiciau; b. at Roston, Lines; son of Shadworth H. Educated at Rugby, and Corpus Christi College, Cambridge. First President of Aristotelian Society, 1880–94. Ho had tremendous crudition, but was handicapped by an involved style of expression. He claimed to have earth a system without outcomes. to have estab. a system, without onto-logical assumptions, on the lines of Hume. logical assumptions, on the lines of Finnies. Works include Time and Space (1865), The Philosophy of Reflection (1878), The Metaphysics of Experience (1898).
Hodmező-Vasárhely, in. of Hungary; connected by rail with Szolnok and Mako.

Pop. 60,000.

Hodograph. If a point P (see diagram) be moving in any path, and from any fixed point O a vector OP be drawn parallel



and proportional to the velocity of P, then 1896.

Hodgson, Ralph (b. 1871), Eng. poet and proportional to the velocity of P, then and prof. of Eng. literature at the Imperial Univ. of Japan. Mingles fantasy positions of P is called the H. of the path of P. Let P, and P, the time from P, to P, and of experience. A number of his poems are expressions of original happioness contrasted with something like the shock of disillusionment—contrasts not P,T, and P,T, and proportional to the velocity of P, then and proportional to the velocity of P. Let P, and P, the time from P, to P₁ boing very small. Then the tangent proportional to the velocity of P. Let P, and P, the time from P, to P₁ and P, T, an velocities at P₁ and P₂ respectively. Then by the triangle of velocities, P₁·P₂· represents, in magnitude and direction, the change of velocity of P during the small time, i.e. P₁·P₂· is proportional to the acceleration of P. As P traces out its path, so P¹ traces out the H. and the velocity of P¹ in the H. represents, in magnitude and direction, the acceleration of P¹ in the original curve. In particular, if P moves with a uniform velocity in a circle, P¹ describes a circle with a uniform velocity. Hence P has a constant acceleration. celeration.

Hodometer, see Phinometer.
Hodson, Major William Stephen Raikes (1821-58), Angio-Indian soldier, leader of light cavalry in the Indian Mutiny, usually known as 'Hodson of Hodson's Horse,' Educated at Rugby and Cambridge, he joined the Indian army in 1845, fighting in the first Sikh war. Rising to be commander of the Puniah Corps of Guides, 1852, he was dismissed in 1855 for harsh administration and alleged errors in the regimental accounts. On the outbreak of the Mutiny he rode with despatches from Karnal to Meerut and back, and was allowed to raise his famous regiment of horse (Corps of Guides, Punjab Irregular Force) and became head of the Intelligence Dept. H helped in the reduction of Delhi, and afterwards brought in Bahadur Shah, the last of the Moguis, as dur Shah, the last of the Moguls, as prisoner, but tho, the three princes down to overawe the mob. His conduct over this and over money matters has been severely censured, and he was even accused of 'looting.' He was killed in an attack on Lucknow. See G. Hodson, Hodson of Hodson's Horse, 1833; Bosworth Smith, Life of Lord Laurence (app. to 6th ed.) 1885; T. R. Holmes, Four Famous Soldiers, 1889; and History of the Indian Mutiny, 1899; L. T. Tretter, A Leader of Light Horse, 1901; and Sir C. Chamberlain, Remarks on Captain Trotter's Biography of Major W. S. Hodson, 1901. 1901.

Hodza, Milan (1878–1944), Slovak statesman, son of a Protestant pastor. Entered the Hungarian Parliament in 1905 as the sole Slovak representative. Interned in 1914 for systematic criticism of the Hungarian gov. Was one of the leading advocates of co-operation between the different othnical elements in the Ozechoslovak State, of which he was the ore the lower of the deal of a commonwell the lower than the common of the lower than the lower ponicy based on Czecoslovak political apport of the ideal of a commonwealth of sovereign independent Central European States, linked together by cooperative solidarity. In his Federation & Central Europe (pub. 1942) he advocated a Foderation of Danubian States for

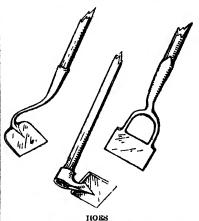
estab. in 1937. He resigned just before the Munich Pact for he foresaw only too clearly what terms would be imposed on his country. He became Vice-President of the Czechoslovak State Council in London, but controversies over his foreign policy and his peasant policy of agrarian democracy widened the breach between him and Dr. Benes and he preferred to migrate to the United States, where he died.

Hoe. Righard Marsh (1812-86). Amer.

where he chec.

Hoe, Richard Marsh (1812-86), Amer.
Inventor, b. in New York City, son of
Robert H., a mechanic. He estab. a
manufactory of printing-presses, using
sleam to run the machinery, in New York
City is examinating with two batchastin. steam to run the machinery, in New York City in conjunction with two brothers-in-law, and became head of his father's firm soon after. His prin, invention was the printing-machine known as the H. rotary or 'lichtning' press, patented in 1846. Hoe (Fr. hour, modern (jer., Haue), im-plement used in gardening and agriculture for extignating weeks singing out, root.

for extirpating weeds, singling out root crops, stirring the surface-soil, and such-like purposes. The ordinary garden H.



Swan-necked Hoe, Draw Hoe, and Dutch Hoe

has a flat blade set transversely in a long wooden handle, and the best one for agric. purposes is the swan-neck Having a long curved neck joining the blade to the handle. There is also the Dutch or thrust H., with the blade fixed into the handle as in a spade. Besides these there are sev. types of horse-drawn its used among root and grain grone and ils. used among root and grain crops, and capable of working one or sev. rows at a time

Hoek van Holland, see HOOK OF HOLLAND.

Hoenir, lesser god of Norse mythology bours.' In 1935, when the political horizon was growing black, he became spoken of by the Vanir (gods of the atmosphenos) from Minister. He hastened the realisaphere, to whom he was given as hostage tion of Ruthenlan home rule, which was by the Aesir, he plays no prominent part

of the world, it rose afresh from its ashes.

Hof: (1) tn. in N.E. of Bayaria, Upper
Franconia, 30 m. N.E. of Bayreuth, on the Saale. It was destroyed by fire in 1823, since when it has been almost entirely rebuilt. Before the Second World War H. was a noted seat of the textile industry, and had manufs. of calloo, cloth, and hosiery. It has a hospital founded in 1262, and some interesting churches. Jean Paul's earlier years are closely associated with the tn. Pop. 45,000. (2) Tn. in Norway, 50 m. N. of Christiania. Pop.

5000.

Holer, Andreas (1767-1810), Tyrolese patriot peasant-leader, b. at St. Leonard in the Passier valley, where his father was an innkeeper, which trade H. inherited, and in addition dealt in wine and horses with the N. of Italy. In 1809 he called the Tyrolese to arms to expel the Fr. and Bavarians, and they responded with ardour, and swept the latter out in seven weeks, overwhelming them at Sterzing, By this victory the Austrians temporarily occupied Innabruck and H. was conspicuous amongst the insurgent leaders. By the treaty of Schonbrunn, the Tyrol was again ceded to Bavaria, and although

By the treaty of Schönbrunn, the Tyrol was again ceded to Bavaria, and although H. again took up arms, he had to disband his followers and seek refuge in the mts., where he was betrayed, captured, and shot. See lives by K. T. Heigel, 1875; and A. von Bossi-Fedrigotti, 1935.
Höffding, Harald (1843–1931), Dan. hilosopher: b. in Copenhagen where he was educated. School teacher, 1861–1871; then prof. in univ. of Copenhagen. He progressed, from the opinion of Kierkegaard with relation to the separateness of Faith and Knowledge, into Positivism with qualifications. Works include: Den myelske Ficosoft i vor Tid (1874), Den humane kitk (1876), Psykologi i Omrids poa Grundlag af Erfaring (1882), Etik, (1887), Psykologiske Undersögelser (1889), Kontinutielen i Kant's filosofske Udnik-lingsgang (1893), Den nyere Filosofs Historie (1894–95), Det psykologiske Grundlag for logiske Domme (1899), J. J. Rousseau og Nans Filosoft (1896), Mindre Arbeider (1899–1905), Heligiansfilosoft (1901), Moderner Filosofer (1904, Eng. trans., 1914), Den menneskelige Tanketyner (1927), Erindringer (1928), Erkendelsesteoriens navær-nde Stilling (1930).
Hoffmann, August Heinrich, known as Hoffmann von Fallersleben (1798–1874), Ger. poet and philologist, b. at Fallersleben

as one of the triad. When consulted his in Lüneberg, his father being the mayor invariable answer was 'Let others advise'; so Mimir had to be sent with him to the Vanir and the gods lost their of the Vanir and the gods lost their chief counsellor. He is described as the lord of the Ozze, and is sometimes represented with long legs like a stork. II., with Odin and Lodhurr, gave life to the first to use the divining rod. Some identity him with Tyr. Uhland calls him the singer. He played an important part when, after the last great battle and the destruction of the world, it rose afresh from its ashes, it should be sent the first to resign his chair, and then travelled for three years, returning to Prussia after the revolution of 1848. He wrote, Horas of the world, it rose afresh from its ashes, its limited by the sent the should be shou to resign his chair, and then travelled for three years, returning to Prussia after the revolution of 1848. He wrote, Hora Belgicæ (1830-62), Geschichte des Deutschen Kirchenlieds (1832), Soldalenlieder (1809-70), Mein Leben (autobiography ed. by F. Gerstenberg 1892-94). A selection from his works was ed. by H. Benzmann (1924). See lives by J. M. Wagner, 1869-1870 and H. Reuter, 1921. Hoffmann, Ernst Theodor Wilhelm (1776-1822), Ger. writer and composer, b. at Königsberg. He assumed the name Amadeus in place of Wilhelm in homage to Mozart. In 1792 he entered the univ. of his native city to prepare for a legal career, and in 1795 began to practice as a jurist at Königsberg, subsequently going

Jurist at Königsberg, subsequently going to Berlin; but music interested him more than his legal duties. In 1706 he was appointed assessor at Posen; but his brilliant powers of caricature got him into trouble, and he was obliged to leave Posen. In 1804 he was transferred to Posen. In 1804 he was transferred to Warsaw, where he made the acquaintance of Werner, but was forced to quit office in 1806, when Warsaw was occupied by the Fr. For the next ten years he led a precarious existence, supporting himself by composing and giving music lessons. In 1816 he was appointed councillor of the Court of Appeal. Some of his shorter tales appeared in the collection Phantasiestucke in Callots Manier (1814), and were followed by the gruesome novel. Dis followed by the gruesome novel, Die Eliziere des Teufels (1915-16). Two other collections are Namistucke (1817) and Die collections are Namistucke (1817) and Die Serapionsbruder (1819-21) the latter of which includes pictures of Ger. I'fe and incidents from It. and Fr. hist., as well as gruesome tales; indeed it contains Das Fraulein vm Scuddri, generally considered his best work. Other books of his are Klein Zaches (1819), and the autobiographical Lebensansichten des Katers Murr (1820-22). His fairy tales, Der Goldene Topf, were trans. by Carlyle in German Romance (1827). He also wrote an essay on Mozart's Don Juan, and composed an opera on Fouqué's Undine (1816). Offenbach's opera, The Tales of Hoffmann, is founded on some of his tales. H. was one of the master novelists of Ger. Romanticism, and his works are remarkable for their humour and realism. His collected works, ed. by G. Ellinger, were able for their humour and realism. His collected works, ed. by G. Ellinger, were pub. in 1894; his lotters and diaries ed. by H. Muller, in 1812 and 1815 respectively. See studies by W. Harioh, 1920; E. Kroll, 1923, K. Ochsner, 1936; and W. Bergengrun, 1940.

Hofmarm, August Wilhelm (1818-92), Ger. chemist, b. at Glessen. He first studied law and philology at Göttingen, but later turned his attention to chem., and in 1845 was appointed director of the

and in 1845 was appointed director of the

Royal College of Chem. in London. From von der Pflanzenzelle and Allgemeine 1856 to 1865 he was chemist to the Royal Morphologie der Gewöcker. Mint, when he returned to Berlin as prof. of chem. and spent the rest of his life in that city. His work covered a wide range of organic chemistry—his contribu-tions to the scientific jours, were mainly on this subject. He also devoted much labour to the theory of chem. types. His chief works are: Introduction to Modern Chemistry (1865), The Life-Work of Liebig (1876), and Chemische Erinnerungen (1882). See Memoriul Lectures delivered before the Chemical Society, 1893—1900 (1874). 1900 (London).

Hofmann, Josef Casimir (b. 1877), Polish planst, b. at Cracow. Pupil of his father (prof. at Warsaw Conservatory). Made his appearance before the public at the age of six, and three years later made a tour of Europe, becoming a celebrated musical prodigy, Visited the United States in 1887-88 and, after studying two years under Rubinstein made his debut st Dresden in 1894. Has pub. planoforte compositions and is one of the leading modern planists. Since 1898 has lived principally in America. Director and Press of Charle 1995, 38

principally in America. Director and Dean of Curtis Institute of Music, 1926–33.

Hofmannsthal, Hugo von (1874–1929), Ger. poet and dramatist, b. at Vienna, where he was educated. Literary success Holmannsthal, Hugo von (1874-1929), Ger. poet and dramatist, b. at Vienna, where he was educated. Literary success came to him early, with the pub. of two or three books of poems before he was twenty. Later ' in his career he produced a number or romantic plays and also furnished the librettos for sev. of Richard Strauss's operas: Elektra (1909), Der Rosenkavalier (1911), Anadne auf Nazas (1912), Die Frau ohne Schatten (1919), Die agnytache Helena (1920). His works (besides the above-mentioned libretti) include: Gestern (1891), Des Tod and des Tud (1893), Der Abenieurer und die Sängerin (1893), Der Abenieurer und die Sängerin (1907), Prosaische Schrigten (1907), Gedichte (1910, 1922, 1925), Christinas Hemreise (1911), Jedermann (1912), La Légente de Joseph (1914), Alkestis (1916), Der Schwieripe (1921), lichen und Aufsatze (1921), Die Hochzeit der Sobeide (1922), Das Salzhurger Grosse Weitheater (1922), Protrische Epigramme (1923), Der Turm (1923), Der Erzahlungen (1923), Der

Pos Salzinsper Gross by extended (1923), Per Unbestechtiche (1923), Der Unterhe Epigramme (1923), Der Turm (1925), Dret Erzuhlungen (1927). See studies by O. Heuschele, 1929; H. Temborius, 1932; K. J. Naef (with bibliography), 1938, and E. Brecht, 1946.

Holmeister, Wilhelm Friedrich Benedict (1824-77), Ger. botanist, b. at Lelpzig, where he was educated and entered business as a music-dealer, studying botany in his spare time. In 1863 he was appointed to a professorship in Heidelberg, and nine years later was transferred to Tübingen. In 1851 he pub. his prin. work, Vergleichende Untersuchungen der Kennung Entfaltung und Fruchtbildung höherer Kryptogamen und der Samenbildung der Coniferen (1851), which stands in the first rank of botanical books, and is a typical work on plant-morphology.

Morphologie der Gewöchse.

Hofmeyr, Jan Hendrik (1845–1909), S. African politician, b. at Cape Town, where he was educated, leaving school at the age of sixteen and becoming a journalist. He joined the staff of the Volkevriend, which he bought in 1861 and amaigamated with the Zuid Afrikaan, under the title of Ons Land. In 1879 H. entered Parliament, where he remained for sixteen years, becoming leader and envisement of the becoming leader and spokesman of the Dutch party in the colony. In 1887 he was one of the Cape delegates to the first colonial conference held in London. Until the Jameson Raid of 1895 he was a sup-porter of Cecil Rhodes.

Hofmeyr, Jan Hendrik (1894–1948), S. African statesman and historian. Came to Oxford as a Rhodes scholar and become principal of the Univ. of Witwatersrand at the age of twenty-five. His financial acumen attracted the attention of Gen. Smuts, and at the age of thirty he was appointed administrator of the Transvaal. in 1929 he entered Parliament as member for Johannesburg and took a leading part in the movement for the reconciliation of Gen. Smuts and Gen. Hertzog and the reunion of S. Africans of Brit. and Boer trock, from which the United Party originated. In the coalition gov. of 1933 he was minister for the interior, education, and public health. But his sympathies for the Bantu pop. soon made him unpopular with many of the Afrikaners. In 1936 he strongly opposed the Bill to destroy the Cape native franchise, and in 1938 he resigned in protest against the action of Hertzog in appointing as a representative In 1929 he entered Parliament as member licrizog in appointing as a representative of native interests in the Senate a defeated colleague with no special qualifications in that respect. When the Second World Colleague with no special quantications in that respect. When the Second World War broke out H. rejoined the gov, as munister of finance. He was often called upon to deputise for Gen. Smuts and in 1913 was formally appointed Deputy Prime Minister. In the 1948 elections his liberal attitude towards the non-Kurenceau races allegated many electors. Furopean races alienated many electors, but his party supported him, and it was but his party supported him, and it was generally understood that he would lead it when Gen. Smuts should retire; and he remained in the foretront of the opposition to Dr. Malan's poi cy of segregation. His South Africa (1931), a hist. of the country, is instructive on native policy, the author rejecting segregation, racial fusion, and equality slike, and treating the whole problem as a question not ing the whole problem as a question not of politics so much as economics. See T. MacDowell, Jan Hofmeyr: Heir to

Smuts, 1948.

Holwil, estate some 6 m. to the N. of Bern in Switzerland, which was purchased by Fellenburg to start his educational institution. See Fellenburg, Philip Emmanuel von.

Hog. Sheep still retaining its first fleece is known as a H. in Scotland, and a hogget is a two-year-old sheep. See also Pig.

is a typical work on plant-morphology. H. also contributed two notable parts to a handhook of physiological botany, never and author, b. at Barton-on-Humber; completed, under the titles of Die Lehre eldest son of Rev. George H., incumbent

of that place. He was educated at Winchester and at Magdalen College, Oxford, and was a tuto at Magdalen 1880-93. He explored Asia Minor in 1887, 1890, 1891, and 1894. Lycayated at Paphos, 1888; Der el-Bahari, 1894; Alexandria, 1895; in Fayum, 1896; Naukratis, 1899 and 1903; Ephosus, 1904-05; Assuit 1906-1907; and Jerahius, 1911. He was director of the Brit "chool at Athens, 1897-1900, and conducted excavation sat Cnosus and the Dictaran Cave, 1900. In 1909 he became keeper of the Ashinolean Museum, a post he held till death. In the First became keeper of the Ashinolean Museum, a post he held till death In the First World War, he was director of the Arab Rureau at Cairo. C.M.G., 1918. His pubs, include: Devia Cupria (1990), Modern and Ancient Roads in Asia Minor 1990). Modern and Ancient Roads in Asia Umor (1892), Philip and Alexander of Vlacedon (1897), The Nearce East (1902). The Peneration of Araha (1904), The Archaic Arlemana of Ephesus (1903), Jonia and the East (1909), Accidents of an Antiquarie's Life (1910). The Ancient Fast (1914), Carchemish I. (1914), The Balkans (1915), Hittis Seals (1920), Irabia (1922), The Wandering Scholar (192).

Hogarth, William (1697-1764), painter and engraver, and founder of the Brit School of Paintang, b. in London. He began to draw at an early ige and was

began to draw at an early age and was apprenticed to a silver-plate engraver,



WILLIAM HOGARTH Lugraving after a self portrait (in the National Gallery).

finishing his time at the age of twenty when he started engraving on copper. In 1724 he pub on his own account his plate 'Masquerades and Operas, Burlington Gate,' but he first became known as an engraver by his plates for Butler's Hudi-bras, of which the last two, representing the Burning of Rumps at Temple Bar' and the Procession of the Skimmington, are the best He next turned his attor-tion to oil-painting, executing 'small tion to oil-painting, executing 'small conversation pieces, from twelve to

He was educated at Win-Magdalen College, Oxford, reputation by "A Harlot's Progress," a scries of pictures in which he portrays the Minor in 1887, 1890, 1891, cavated at Paphos, 1888; 1894; Alexandria, 1895 and Servis, her passage through a "Martin's summer" as the mistress of a rich Jew, to "Captain Macheath" and Drury Lane, to Ruidewell and beating home to disease Bridewell and benting hemp, to disease and death, to a shameful funeral, and a forgotten grave. This was speedily followed by 'A Rake's Progress, which did not meet with equal success, owing to the fact that it attacked the vices of the the fact that it attacked the vices of the man instead of those of the woman. 'The Fair,' or Southwark Fair,' depicts the carnival suppressed in 1762 in 1738 he attempted 'the great style of historynainting,' and produced on a staircase of St Bartholoniew's Hospital two Scripture stories,' The Pool of Bethesda and 'The Good Samaritan,' but those did not meet with the errourscenter he expected so Good Sanarican, out these did not meet with the encouragement he expected, so he again turned his attention to his former work and painted the 'Strolling Actresses dressing in a Barn, 'The Enraged Musician,' The Distrest Poet,' etc. In 1745 H had a sale by autton of his In 1745 H had a sale by auction of his pictures, and the ticket of admission was the techning known as the 'Battle of the Pictures' The same veer his master-piece, the 'Marriage à la Mode' (now in the Tate Gallery), appeared, which represents a variety of 'Modern occuriences in high lite' and in 1716 his portrait of 'Garick as Richard III.' for wikh he received £200, as well as that of 'Simon, Lord Lovat' In 1747 he produced 'The 'tage Coach' and the series 'Industry and Idleness,' in 1756 'The Invasion,' and in 1761 'The Bathos,' his last work He also painted a portrait of himself which resulted in the pub of The last work He also painted a portrait of himself which resulted in the pub of The Analysis of Beauty (17.3) H is principally famous as a satirist on canvas, and as such his never been surpassed; he represented the foibles of his time in a series of engravings which exhibit character, humour, and power. Until recently little attention has been paid to H 's drawingy, some of which are in the royal collection and others in the possession of the marquess of Exeter There are some 85 known and surviving examples of these. H did not, it seems, make a practice of sketching from nature, nor did he usually make studies for separate figures in pic-tures and prints. Preparatory drafts of whole compositions form the majority of whole compositions to the insignity of the drawings and of those nearly all refer to prints rather than to pictures. None of the drawings, probably, was ever intended as an end in Itself, or a final expression of an idea, yet the liveliness of if 'a mind, his sense of fun, horror, or disgust, his faciling for character, is nearly always present in them II 's house in Hogarth Lane, Chiswick, is now a museum where some of his works may be seen. See J. Nichols and the Steevens, The Genurae Works of William Hogarth, 1817; J. B. Nichols, Anecdone of William Hogarth written by himself, 1833; A. Dobson, William Hogarth, 1879; A. P. Oppé, The Drawings of William Hogarth, 1879.

Hogben, Lancelot (b. 1895), Eng. zoologist, educator, and writer; educated at the drawings and of those nearly all refer

Trinity College, Cambridge; Mackinnon Student of the Royal Society, 1923. Between 1919-30 held various posts as lecturer in, or prof. of, zoology and experimental physiology. Prof. of social biology London Univ., 1930-37; Reglus Prof. of natural hist., Aberdeen Univ., 1937-41; Mason Prof. of zoology, Birmingham Univ., 1941-47. Visiting prof. to Wisconsin Univ. Pub. include Nature and Nurture (1938), Mathematics for the Million (1936), Science for the Catizen (1938), Dangerous Thoughts (1939), and scientific memoirs on genetics, ductless glands and medical statistics to the Proceedings of the Royal Society and other scientific nour-Trinity College, Cambridge; Mackinnon scientific jours.

Hogg, Sir Douglas McGarel, see HAIL-

Hogg, James (1770-1835), called 'The Ftfrick Shepherd,' poet, b. at Ettrick, Selkirkshire, was the son of a small farmer. He was entirely self-educated, but at an early uge began to compose verses, though the setting of these to paper was at in t a task of great difficulty. He first appeared in print in 1800 with the patriotic song, Donald McDonald, which became popular at once. Encouraged by his success, be, in the following year, publis Scotts of Pastorals, Poems, and Songs Ta 1800 his west Scott and art less often. In 1802 he met Scott, and not long after became friendly with Allan Cunningham. His next pub was The Mountain Bard (1807), and in 1197 he issued The Forest Minstrel, which was not a financial success. Three years later appeared the admirable work, The Queen's Wake, and in 1816 Madoe of the Moor. In that year he also brought out The Poetic Mirror, or The Linng Burds of Great Britain, a vol. of parodies of the leading poets of the day, including Scott, Coleridge, Southey, Byron, and Machineth Assert his approximately. including Scott, Coleridge, Southey, Byron, and Wordsworth. Among his subsequent books are: The Browne of Bodsbeck, and other Tales (1917), The Jacobite Relies of Scotland (1919), Winter Evening Tales (1520), The Private Memories and Confessions of a Justified Sinner (a work of genius, anticipating the psychological thrillers' of the twentieth century anonymously, 1821); and Queen Hynde (a poem, 1926). He contributed to Blackwood's Magaine many articles some of which he collected in 1929 under some of which he collected in 1929 under some of which he collected in 1829 under the title of the Shenheri's Calendar, and in 1834, to the great annoyance of Lockhart, he printed The Domesic Manners and Private Life of Sir Waller Scotl, a book that is now too seldom read. He has been described as the greatest poet after Burns, that has ever sprung from the common people, and it is certain that he attained to very great heights when dealing with to very great leights when dealing with local or legendary stories, while his gift of imagination was so great as tightly to be outsiled gonius. Much of his work was be entitled genius. Much of his work was mediocre, but he had in a great degree the lyrical gift, and his poems, II hen the Ku come Hame and Flora Macdonald's Fare well are exquisite. H. wrote his Auto biography. See Mrs. Gardon, Memorials of James Hogo, 1885; H. T. Stephenson, The Ktirick Shepherd: a Biography, 1922; E. O. Batho, The Ktirick Shepherd,

Hogs, Quintin (1845-1903), Eng. philanthropist, seventh son of Sir James Weir H., b. in London. He was educated at preparatory schools and Eton, which he left in 1863 and entered business, being first with a firm of tea merchants and later with sugar merchants. Philanthropy, however, was the main concern of H.'s bic, and in 1864 he started a ragged school for bovs. In 1881 he purchased the Royal Polytechnic Institution in Regent Street for providing young men and women of for providing young men and women of the lower middle classes with instruction, recreation, and social intercourse, and thus successfully initiated the polytechnic movement in London.

Hogget, see under Pio.

Hogget, see under FIG.
Hogland, small is, situated in the gulf of
Finland, 110 m. W. of Leningrad. In
1788 a battle took place here between the
Russians and the Swedes. There are
extensive quarries of granite and porphyry. It has an area of about 11 sq. m. Pop. 800.

Hogmanay, name applied in Scotland and a few parts of England to the last day of the year, viz. Dec. 31. It is also used for the cake given to the children who beg for gifts on the morning of that day. If unlarks the beginning of New Year holidny festivities in Scotland.

Hogmanay, N. Amer. Columing snake.

Hognose, N. Amer. colubrine snake (genus *Heterodon*) with a flattened head and a snout like a hog's. It is not

poisonous.

Hog's Back, range of chalk hills, 160 ft. high, which extends from Guildford to Franham, Surrey, England. It is triversed by an old coach road which affords a splendid view of the surrounding country.

Hogshead, liquid measure of capacity, varying with the nature of the contents, but equivalent for wine to sixty-three gallous, and for ale and beer to fifty-four gallons. In England it has now fallon into disuse, but the measure still obtains in the United States, and is equivalent to with three Amer gallons. The etymology of the word has been much discussed and its origin is uncertain.

Hogue, or Hogue, La, roadstead on the b. side of the N. part of Cotentin Peninsula, France, dept. Manch, off a rocky and dangerous coast. Give its name to the naval victory of the Eng. and Dutch over the Fr. in 1692.

Hohenelbe (Vrchlabi), tn. in Czecho-slovakia on the kibe, 1 m. N.E. of Gits-chin. It is engaged in various branches of manuf., principally the textile industry. Pop. 22,000.

Hohenfriedberg (Polish Dobromierz), tn. m Silosta, 3, m. W.S.W. of Wrocław (Breslau) Poland. Noted for Frederick the Grent's victory over the Austrians and

the Great's victory over the Austrians and Savons in 1715. Pop. 2008.

Hohenheim, Philippus Aureolus Theophrastus Bombastus von, see Paracelos.

Hohenheim, vil in Württenberg-Baden, Germany, 7 m. S. of Stuttgart. A royal castle, built in 1785, is stuated in the neighbourhood: this was, later, used as an agric, scademy with botanical gardens. The sturges on the staipness are by The stuccoes on the staircase are by Isopi.

many, situated on the R. Lenne, 5 m. E. of Hagen. It is the seat of an iron industry and has textile manufs. Pop. 4000.

Hohenlinden, vil. in Upper Bavaria, Germany, 20 m. E. of Munich, Germany, celebrated for the victory gained there over the Austrians, by the Fr. and Bavarians under Moreau in 1800. The battle is described in Campbell's lyric of the name. Pop. 970.

Hohenlohe, former principality of Germany in Franconia, now comprised chiefly in Wurttomberg and Bavaria.

Hohenlohe - Schillingsfürst, Chlodwig Kari Viktor, Prince of (1819-1901), Ger. statesman, b. at Ragaz. Was appointed chief minister of Bavaria in 1866, and endeavariate to luting about the union of S. deavoured to bring about the union of S. and N. Germany, but was forced to resign. During the Franco-Ger. war he advocated the alliance between Bavaria and Prussia. the alliance between Havaria and Prussia. In 1873 he was appointed, by Bismarck, Ger. ambas. in Paris, and in 1885 became governor of Alsace-Lorraine; he was imperial chancellor in 1994, and led the active Ger. colonial policy. He resigned in 1990. See J. Zickursch, Politische Geschichte des neuen deutschen Kaiserreichs, 1630 1930.

Hohensalza (Polish Jnowroclaw), tn. in the prov. of Poznan, 66 m. E.N.E. of Poznan. Until 1905 known as Jung-Breslau. Salt works and saline springs

are in the vicinity, and there is a sugar-beet industry. Pop. 34,100.

Hohenstaufen, Ger. princely house, members of which were emperors or Ger. kings from 1138 to 1251. The earliest known member of the family was Freder ick von Buren, who d. at the end of the eleventh century. His son, Frederick built a castle at Staufen or H., and called built a castle at Staufen or H., and called himself by this name. He was a supporter of the Emperor Henry IV, who gave him the duchy of Swabia, and when Henry was absent in Italy acted as vicegerent. In 1105 he was succeeded by his son Frederick II, the one-oved, who, together with his brother Conrad, held S.W. Germany for their uncle, the Emperor Henry V. On the death of Henry in 1125, his estates fell to Frederick, but Lothair the Saxon being chosen emperor, a furious war broke out which ended in the submission of Frederick. In emperor, a furious war broke out which ended in the submission of Frederick. In 1138 Conrad was elected emperor of Germany as Conrad III., and was succeeded by his nephew, Frederick Barbarossa, in 1152. Other emperors of this family were Henry VI. (1190-97), Philip I. (1198-1208), Frederick II. (1212-1250) and Conrad IV. (1250-54), the male line becoming extinct in 1208, when Conradin was put to death in Italy by Charles of Aujou. See Holy Romay Empire. See F. W. Schirrmacher, Die letzten Hohenstaufen, 1871. J. Bühler, Die Hohenstaufen, 1925.

Hohenlimburg, tn. of Westphalia, Germany, situated on the R. Lenne, 5 m. E. of Hagen. It is the seat of an iron industry and has textile manufs. Pop. 4000. Hohenlinden, vil. in Upper Bavaria. Germany, 20 m. E. of Munich, Germany, celebrated for the victory gained there over the Austrians, by the Fr. and Bavaria lans under Moreau in 1800. The battle is described in Campbell's lyric of the name. Pop. 420 became the ancestor of the Swabian branch. On the death of Courad, his son Burgrave Frederick III. was the representative of the Franconian branch, and he took a prominent part in Ger. affairs, securing the election of Rudolph of Haps-burg as Ger. king in 1273. In 1415 Bur-grave Frederick, the son of Frederick V., received Brandenburg from King Sigisreceived Brandenburg from King Sigismund, becoming margrave of Brandenburg as Frederick I., and in 1701 the elector of Brandenburg, Frederick III., became king of Prussia. (A learned survey of the H. dynasty in the eighteenth century is to be found in the introductory part of Curlyle's Frederick the Great.) In 1871 Wm., the seventh king, took the title of Ger. Imporor. The Swabian line was divided in 1875 into the branches of Heablinger. in 1576 into the branches of Hechingen and Sigmaringen. These continued un-broken until 1849, when they fell into the hands of Prussia. The proposal to raise frince Leopold of Hohenzollern-Sig-maringen (1835–1905) to the Sp. throne in 1870 was the immediate cause of the war between Germany and France. war between Germany and France. Prince Charles of H.-Sigmaringen became king of Rumania in 1881. The Hs. reached the acme of their power after the estab. of the united Ger. Empire following Bismarck's wars of 1861, 1866, and 1970-71. The H. king of Prussia was thenceforth the Ger. Emperor, and Prussian traditions became the accepted order of the real country. order of things in place of the old cultural and cosmopolitan life of S. and Central Germany. The apirit of the house of H. sought its expression in militarist ambition, and its leading figure was the Kaiser, tion, and its leading neutre was the Kasset, Wm. II., who almed at world domination in the First World War, through the conception of Mittel Europa. After the military collapse of Germany in 1918, Wilhelm II (d. 1941) fied to Holland and the H. dynasty came to an end. But the house of H. still hoped to return to the throne throughout the duration of the post-war Ger, republic and even subsequently, in spite of the opposition of the Nazis to the restoration of the monarchy. Prince Wilhelm and his second son, Louis Ferdinand. His elder son, Friedrich Wilhelm, was killed in Flanders in June, 1940, but, in any case, had forfeited his claim by marrying a woman of unequal birth.

EMPIRE. See F. W. Schirmacher, Die letzten Hohenstansen, 1871. J. Bühler, Die Hohenstansen, 1925.

Hohenstein-Ernstthal, in. in Saxony, Germany, 12 m. N.E. of Zwickau. Textile manufs. and knitting are the chief industrice. Pop. 17,500.

Hohenzollern, Ger. imperial dynasty, which traced its origin back to the ninth century to one Count Tassilo, who built

land bounded on the S.W. by Baden and on all other sides by Württemberg. Its of world-wide repute. His knowledge of area being 441 sq. m., and pop. of 78,000. technique and his draughtemanship were alike extraordinary and his drawings and industries are agriculture and cattle-colour prints had considerable influence and cattle-colour prints had considerable influence and cattle-colour prints had considerable influence. industries are agriculture and cattle-rearing. Iron. coal, gypsum, and salt are found, and there are also some mineral springs. The castle of H. was destroyed

found, and there are also some managers, springs. The castle of H. was destroyed in 1423, but has been restored sev. times, the present one being built by King Frederick Wm. IV. H. is now included in the Land of Württemberg.

Hohenzollern Redoubt, very strong tactical point in the Ger. line during the First World War, situated just S.W. of La Bassée. During the battle of Loos in the autumn of 1915 the Brit. operations included the ariack against the H. Redoubt. cluded the attack against the H. Redoubt. Fighting here was of the most desperate nature and lasted from Sept. 27 to Oct. 13. At the first onelaught the Brit. gained it, but Gor. counter-attacks, carried out with great fury, were at once launched against it incessantly, and a see-saw situation ensued into the first week of Oct. The decreet fighting raged round the trenches named 'Big Willie' and 'Little Willie,' in allusion to the ex-Kaiser and his son the ex-Crown Prince. On Oct. 3 the Ger. regained most of the position and on the 8th they launched an attack against both Brit. and Fr., which was repulsed heavily. Brit. and Fr., which was repulsed heavily.

A final Brit. assault was made by a div.

of Territorial in Oct. 13, which at certain
places carried the line beyond the redoubt.

In this action the Territorial Battallons
of the Sherwood Foresters gained great
distinction, and Capt. C. Vickers of that
regiment earned the Victoria Cross.
Despite the great exertions of the Allies,
the results of this offensive were fee from the results of this offensive were far from satisfactory, as the Brit. slone had 50,000 casualties and reaped but small advantages.

Hoists, see LIFT.

Hokiang, prov. of Manchuria, China, situated at the confluence of the Rs. Sungarl. Useum, and Heilungkiang.

garl. Userri, and Hellungkiang. It has in a low, marshy plain, thus having great difficulty in cultivation and drainage. It consists of 18 cos. with Klamusze as cap. Area 47.700 sq. m., pop. 1,936,000.

Hokitika, tn. in New Zealand, South Is., cap. of Westland co., on the N.W. cost about 24 m. 8. of Greymouth. It is noted for its goldfields, but brewing and tanning are also carried on, and there are aw-mills and door factories. Greymouth aw-mills and door factories. Greymouth is the port for the goldfields. Earth-quakes are frequent. Pop. 3000.

is the port for the goldfields. Earthquakes are frequent. Pop. 3000.

Hokkaido (Yezo) (Hoku, north, kai, sea,
and do, road), N. is. of Japan, separated
in the N. from Sakhalin Is. by the La
Perouse Strait and on the S. from Honshu
by the Tsugaro Strait. Area 30,118 sq. m.

Hokusai, Katsuhika (Nakajima TetSujiro) (1760-1849), Jap. painter, book
illustrator and teacher of drawing, b at

Tokyo of a family of artists. Practised early as a wood-engraver; then studied with Shunsho, a well-known designer and painter of colour prints; but he had to leave the studio because of his independ-

colour prints had considerance innecessor art in foreign countries. His qualities are shewn to great advantage in his River Bridge, which strongly influenced Whistler's interpretation of moonlight effects. He devoted himself for the most part to the illustration of books or series and to industrial art as well as the teaching of drawing. His very many works include, particularly, the Mangua or Ten Thousand Sketches, a pictorial encyclopedia of all aspects of Japanese life (in 15 vols.; last pub. in 1836); and the Hundred Views of Mount Fuji (1835) (3 vols. in monochrome). His colour prints Thirty Six Views of Fujiyama prove him a master of colour, his combination of greens, blues and yellows being a striking innovation. Other notable works are 'The Wave' (Sir Edmund Walker Allerton, Royal Ontario Museum), 'Views of Famous Bridges,' 'Waterfalls,' Views of Lu-chu Islands,' See works on Hokusai by M. Revon, 1896; E. de (3000; F. Perzynski, 1904; E. F. Strange, 1906; also N. Brown, Block Printing and Book Illustration in Japan, 1924.

Holacanthus, name of a genus of teleotean takes belonging to the family and to industrial art as well as the teach-

Holacanthus, name of a genus of teleo-stean fishes belonging to the family Chetodontides. The species are marine and carnivorous, and are particularly abundant near volcanic rocks and coral is. They are remarkable for their beautiful colouring, *H. imperator*, a native of the E. Indies, being deep blue with bands of orange. The flesh is highly

bands of orange. The flesh is highly esteemed as diot.

Holbach, Paul Henri Thyry, Baron d' (1723-89), Fr. philosopher, b. at Eidesheim in the Palatinate. He spent most of his time in Paris, and, having great wealth and being of hospitable disposition, entertained and was intimate with the most distinguished men of his day, among them, Diderct, Grimm, Hume, Gurrick, Wilkes, Sterne, Rousseau. He wrote a large number of articles on chemistry and iarge number of articles on chemistry and mineralogy for the Encylopédic, and in 1767 pub. his Christianine dévoile, in which he attacks Christianin and religion. In 1770 his famous book, Le Système de la Nature, appeared, and in it he donied the existence of the Delty and asserted that happiness is the end of mankind. The book evoked much criticism, and was anaworated by Frederick the Greet and Vol. answored by Frederick the Great and Vol-taire. In philosophy H. was a follower of Didorot and his portrait appears in the character of the virtuous atheist Wolmar of the Nourelle Héloise of Rousseau.

or the Nouvette Hitloise of Housseau.
Holbsach, very anct. mrkt. tn., Lincolnshire, England, 8 m. E. of Spaiding. It was once on the shore of the Wash, but is now 6 m. Inland. H. is the bp. of the antiquary, Wm. Stukeley. Pop. 6100.
Holbein, Hans (c. 1465-1524), the Elder, Ger. painter, was a native of Augsburg.

leave the studio because of his independ-ent views on style, H. leaning to the schools of Van der Weyden and Memiline, classical Kano mauner. H. became not while his 'ater pieces, e.g. the basilica of only the leading representative of the St. Paul (1502) in the gallery of Augsburg,

show Flemish influence He was a pro-lific artist, and devoted his energy mainly to religious subjects his crowning work being the alter piece of St Sebastian in Munich with the picture of the Annunciation, and the graceful figures of St Barbara and St Flizabeth on the wings

See monograph by C Glaser, 1908 Holbein, Hans (1497-1543), Holdein, Hans (1437-1743), the Yourgor great Ger painter, b at Augs-burg Little is known of his early years, but in 1015 he went to Basle with his brother Ambrosius, and while there drow brother Amoresus, and while there are williustrations for Erasmus's Praise of Folly, which were as popular as the work itself Besides this he painted the portraits of the burgomaster, Jacob Mever, and his wife, and the evaluate skill of the artist is shown in the elaboration of every detail in the rich embroidery of the latter's attire In 1117 he was in Lucerne, and was employed by the mayor of Lucerne was employed by the mayor of Lucerne to decorate his house with wall paintings, but he soon returned to Basle, and excuted in 1519 the portrait of Bonifacius Amerbach, which is one of the most perfect of his works. Here, too, he was greatly occupied with mu il decoration, his celebrated 'Peasants' Dance' being a wall painting on a house at the corner of the Lisenguise. He also decorated the the history executed many original decorated. tn hall, and executed many original designs for glass paintings as well as for woodcuts, among which his book entitled the Dance of Death 19 the most famous



Madonna' The former was only discovered in the middle of the nineteenth century But marvellous as H 's paint-ings were, his fame in his own day rested on his portraits, and among these his portrait of Frashus at Longford Castle is worthy of mention, is well as his portrait of himself, both of which were excuted before his visit to I ngland. In 1:27 he before his visit to I ngland In 1:27 he came to London, and was introduced to Sh Thomas More, whose portrast he printed as well as that of Warham arch bishop of Cantorbur, and Pishop I lisher, besides eighty seven portraits on tinted paper in Windsor Custle. In 1523 he produced 'The Family of Sir I homas More,' a group of pottraits which has unfortu-nately been lost, and on his return to Basle painted a lifelike picture of his own family which is now in the Museum of that in In 1531 he was again in London, and executed portraits of the Ger mer chants of the Steelyard the most valuable of which is that of Joig Gyze (Berlin), much praised by Ruskin In 1533 he painted 'The Ambassadora' Soon after this he came under the notice of Henry VIII, and painted for him the picture containing Hour VII, Henry VIII, Jane Seymour, and kill aboth of York This masterpiece, noticed by van Mander, and mentioned in the account of the duke of Saxonv's visit to England in 1613, was destroyed by line in 1698 Besides this he painted a portrait of Jane Seymour, now in Vicina, and one of Morett in the now in Vicuna, and one of Morett in the Dresden Gallety H also executed designs for ornament, his drawing for the 'Jane Soymour Cup,' in the Bodleian Library at Oxford being perhaps the most beautiful example of this class of art in the world In 1537, on the death of Jane Seymour, he went to Brussels to paint the young duchess of Milan, a proposed candidate for the king shand (National Gallers), and in 1539 to Cleves to paint the Princess date for the king shand (National Gallers), and in 1539 to Clevis to paint the Princess Anna (Louvie) "Among other postraits of this period may be mentioned that of the duke of Norfolk, Martin Luther, Prince Edward, and another portrait of hunself. The importance of Hans Holbelu's work cannot be over estimated before his time portrait painting was scarcely before and it was be well first. before his time poterul painting was carcely knewn and it was he who first raised the art of painting to perfection in kngland, indeed, it may be questioned whether in many of the fluest requirements of portiature his work has ever ments of the Lafe and Works of Hans Holbern of the Lafe and Works of Hans Holbern in Holbern in Holbern with strength of the Mindle Month of the Lafe and Works of Drawings, 19.0 U (hristofiel, Hans Holbern 1910, His Koegler, Die Bilder zum Chebburh Hortulus Amma, 1943 Holbern, 1926 A Chamberhain, The Art of Holbern 1910, His Koegler, Die Bilder zum Chebburh Hortulus Amma, 1943 Holbern, 1926 A Chamberhain, The Art of Holbern, Ludwig, Baron (1684–1751), creator of modern Data literature, b. at He also designed a title page for More's Utopia, as well as for Luther's Ger trans, of the NT. Of his sacred pictures the Bergen and at the uniw of Copenhagen. In 1704 he came to England and spent two years amongst the Rivaries at Oxford, and in 1711 printed his first work, An Introduction to the History of the Nations scarcely knewn and it was he who first

of Europe. Soon after this he received the Nosenkrantz grant, the holder of which was expected to travel, and spent the years 1714, 1715, and 1716 visiting the various countries of Europe. On his return to Denmark he pub. his Introduction to Natural and Popular Law, and in 1718 became prof. of metaphysics at Copenhagon. In 1720 he was promoted to the chair of public elequence, and in 1730 to that of hist., becoming questor of the univ. in 1737, and a baron in 1747. Up to about 1716 his writings had been concerned with law and hist., but after that date he began a new class of humorous literature, and his Pedar Paars (1719) the conjunct of the class of the (1719), the earliest of the classics of the Dan. language, is a satire of the pedantic stiffness and stupidity of contemporary life and thought. In 1721 the first Dan. theatre was opened at Copenhagen, and Holberg produced in 1722 a Dan. trans. of L'Avare (before this no plays had been acted in Denmark except in Fr. and Ger.). This was followed by numerous original comedies between 1722 and 1725, amongst which may be mentioned Den Vægelsindede; Jean de Frince; Joppe paa Bjerget; Gert the Westphalten; Den politiske Kandestoher; and Henrik and Pernille, blumert typning des Greenbergel [1721] his most famous piece (produced in 1724). After the closing of the theatre he turned his attention to historical and philosophical writing and produced in 1726 phical writing. and produced in 1726 Metamorphosis, a poetical satire; Epistolæ ad virum perillustrem (1727), Description of Denmark and Norway (1729), Ilistory of Denmark (1732-35), Description of Bergen (1737), Universal Church History (1738), Biographies of Famous Men (1739-1715), Moral Reflections (before 1741), A History of the Joves. In 1741 appeared another classic in his famous poem, Neels Klim's Subterranean, Journey and from 1748-31 Epistles, his last pub. work. He also wrote his Autholiography, which, toalso wrote his Autobiography, which, to-gether with Pedar Paars and the Sub-terranean Journey, has been trans. into Eng. The importance of H. cannot be overestimated. He was the first writer in Europe of his time (endtting Voltaire), surpassing both Pope and Swift in genius, and created a literature for a country up to his time without books; indeed it is said that before II. went to Denmark the Dan, language was seldom heard in polite

Dan. language was soldom heard in polite society. See 6. Brandes, Ludvig Holberg et Festskrift, 1881.

Holborn, metropolitan bor. of London, bounded on the N. by St. Paneras and Finsbury, on the S.E. by the city of London, and on the S. and W. by the city of Westminster. 'Holebourne' means the stream in the hollow and elliptics to the stream in the hollow and alludes to the R. Fleet, over which a bridge was built the H. Fleet, over which a bridge was built and often depicted as making her bed in early times, now replaced by the Vianical times, now replaced by the Vianical times and the state of the chapel of St. Etheldreds in Ely Place (so called from the bishops of Ely who held land here as early as the thirteenth century); the par. church of St. Glies in the Fields dating from 1734, originally the site of a leper's hospital founded by Matilda in 1101; the church of St. Andrew built by Wren in 1686 firm of Townend Brothers, worsted

(burnt out in 1941), which numbers Sacheverell among its rectors; Lincoln's Sacnevered among its rectors; Lincoln's Inn, with its Tudor gateway, upon which Ben Jonson is said to have worked as a bricklayer; Gray's Inn, with its four-teenth-century chapel (a great part of which Inn of Court was destroyed in air raids); the half-timbered houses of Staple Inn and the Brit. Museum. H. has an area of 406 acres and a pop. of 22.400 22,400.

Holbrook, Norman Douglas (b. 1888), Eng. naval officer; b. at Southsea; son of Col. Sir Arthur R. Holbrook. When in or Col. Sir Arthur R. Hollsrook. When in command of submarine B.H., on Dec. 31, 1914, he dived under five rows of mines in the Dardanolles and torpedeed the Messoudich, a Turkish battleship. Although fired on and pursued by antiship without mishap. This, however, necessitated being submerged for nine consentive hrs. The first news the crew required on indiving the nevent ship were necessitated being submerred for mine consecutive hrs. The first news the crew received on joining the parent ship was the olicial Turkish confirmation of the Messoudich. For this exploit he was awarded the Victoria Cruss.

Holbrooke, Josef Charles (b. 1878), Eng. composer, b. at Croydon, son of a Bristol unuscian. His orchestral works include The Raren (1900), Queen Mab (1904), The Bells (1906), Apollo and the Scaman (1908). His operas include a Brit. legend trilogy: Walden).

T. E. Ellis (pen-namo of Lord Howard do Walden).
Holeroft, Thomas (1745-1809), dramatist and author, b. in London. He was successively stable-boy, shoomaker, tutor, and actor. In 1780 he pub. his first novel. Alwyn, or the Gentleman Comedian, in which he describes his own experience as a strolling actor. In 1781 his first comody, Duplicity, appeared, and in 1783 he visited Paris as correspondent of the Monning Heruld. He trans. Mariage de Figaro from memory, and produced it at Covent Garden in 1784, himself playing the title-rôle. In 1793 The Road to Ruin, his best and most successful play, appeared, and in 1802 his musical adaptation. I Tale of Mystery, was acted at Covent Garden. H. pub. numerous comedios and comic operas, besides novels and trans. also Human Happiness to poem). His was prais d by Lamb, and Halltt, who ed. his Memoirs (1816). Holda, Goddess of Teutonic mythology. Represented as a kindly goddess, figuring prominently in fairy lore. Regarded as the goddess of spinning and agriculture and often depicted as making her bedwhen it snows, the dakes being the bodfeathers flying about.

manufacturers, but he soon left the counting-house for the mill, and conceived the application of machine power to the various operations of wool-combing. In 1846 he became associated with Lister, and with him brought out a patent for a new method of carding and combing and preparing genappe yarns. In 1848 he opened a large fabrique at St. Denis, and in 1864 concentrated his business at Bradford, which soon became the largest wool-combing concern in the world. Holdenby House, see under HOLMBY.

Holdenby House, see under HOLMBY.
Hölderlin, Johann Christian Friedrich (1770-1843), Ger. poet, b. at Lauffen on the Neckar in Wurttenberg. Son of the chamberlain to a monastery, he became an orphan at an early age, and was a contemporary of Hegel and Schelling at Tubingen Univ. Became a tutor and a private coach at Jena, Frankfort-on-Main and Homburg. In 1801 he took up a teaching appointment at Bordeaux. In a teaching appointment at Bordeaux. In 1802 be became mentally deranged and was in an asylum at Nutringen. Dis-charged in 1804 he became a librarian at Homburg but in 1806 was admitted to the Tübingen asylum. For the rest of his life he suffered from severe melancholia with brief intervals of normality. In his early years was much under the influence of Klopstock and Schiller, for whose Neuer Thalia he wrote the first fragments of his great novel Hyperion. He was also a friend of the philosopher Fichte. An enthusiast for the ideals of classical Greece as they were then understood, he trans. the Antigone and the Oedipus Rex (1804) of Sophocles and wrote a fragment of a tragedy entitled Empedokics. Apart from the idealistic novel Hyperion (1793-99) he wrote lyric poetry which is melodious, rich in imagery, and of great verbal dexterity, often on classical models in Gk. metres. His collected poems were pub. in 1826, and his complete works in 1846. See V. Dilthey, Das Erlebnis und die Dich-tung, 1906 and 1939; F. Zinkernagel, Entstehungsgeschichte von Holderlins tung, 1906 and 1939; F. Zinkernagel, Entstehungsgeschichte von Holderlins Hyperion 1907; Er. Gundolf, Holderlins Archipelagus, 1911; C. Victor, Die Briefe der Hotima, 1921; Die Lyrik Holderlins, 1921; M. Moutgomery, Holderlin and the German Neo-Hellener Move-ment, 1923; S. Zweig, Der Kampf mit dem Dümon, 1925; W. Boehm, Holderlin als Verfasser des Altesten Systemprogrammes des deutschen Idealismus, 1921; J. Hoff-melster, Hölderlin und die Philosophie, 1942. 1942.

Holderness, flat and fertile dist. of the E. Riding of Yorkshire, England, between E. Riding of Yorkshire, England, between the N. Sea and the actuary of the Humber. A parl, div. of 216,551 acs. Pop. 19,500. Holdich, Sir Thomas Hungerford (1843–1929). Eng. explorer; b. Feb. 13 at Dingley, Northants. Entered Royal Engineers, 1862. Afghan war, 1878–80. Supt. Indian frontiers survey, 1892–98. Supt. Indian frontiers survey, 1892-98. In 1899, one of three Brit. commissioners on boundary of Chile and Algentina: made survey for King's award, 1902. Pubs.: The Indian Borderland (1901), India (1904), The Countries of the King's Award (1904), Tibet the Mysterious (1906), The Gates of India (1909).

Holding, in Scots feudal law, denotes the tenure subsisting between the feu superior and his vassal. A feu-farm H. is one by the terms of which the vassal had to pay the superior a yearly rent in money or in corn. A blench H. is one under which the vassal pays a nominal under which the vassal pays a nominal yearly duty. c.g., a rose, a pair of gilt spurs, the object being merely to acknowledge the superiority. A burgage II, is that by which burghs-royal hold lands of the sovereign specified in their charters of erection (see Burgat). A II, by a church, monastery, or other religious or charitable society is called a mortification (cf. Eug. Mortmain or II. 'in the dead hand'). See J. Erskinc, Principles of the Law of Scotland, 1895. Scotland, 1895.

Holdsworth, Sir William (1871-1943), Eng. jurist, educated at Dulwich and at New College, Oxford, where he lectured on law from 1895-97. Eketed Fellow at on law from 1895-97. Elected Fellow at St. John's, Oxford, 1897, and taught law thore for twenty years. Elected Vinerian Prof. of Eng. Law at Oxford, 1922, being in many ways the most distinguished occupant of the chair since Blackstone. From 1903-1908 he was also Prof. of Constitutional Law at University College, London and in 1910 he was appointed All Souls Reader in Eng. Law. At Oxford he weets the first three yels, of his work. Souls Reader in Eng. Law. At Oxford he wrote the first three vols. of his work A History of English Law, which gave him a world-wide reputation. As Vinerian Prof. he brought out a new ed. of his hist., Prof. he brought out a new ed. of his hist., the first 3 vols., appearing in 1922, the ninth in 1925. Meanwhile he had written Sources and Literature of English Law, An Historical Introduction to Land Law (a lucid elementary book on a difficult subject), and many articles in legal periodicals, Eng. and Amer. His works, The Historians of Anglo-Imerican Law (1927), Some Lessons from our Legal History (1928), and Charles Dickens as a Legal Historian (1928), were the outcome of his lectures in America in 1927. On his return from America he was appointed a member of the Indian States Inquiry member of the Indian States Inquiry Committee, constituted to help the Simon Commission, and in 1928 he went out to India.

From 1930 to 1932 he sat as a member of the Ministers' Power Committee. 1937 he publishers from Confinences in 1937 he public law, the chacted law, and the professional development of the law in the professional development of the law in the eighteenth century. In 1934 he was awarded the swiney Prize of the Royal Soc. of Arts, and in 1938 he went out to India again, this time as Tagore Prof. at Calcutta: the result was the pub. of Some Makers of English Law (1938). Made a member of the Order of Merit, 1943. His hist, is a great monument of learning, industry and good corts, earl in the industry and rood sense, and in it he digested and harmonised all the results of the latest Eng., Fr., and Amer. research; and the immense amount of search; and the immense amount of detail in the vols, never obscures his good judgment or perspective nor blinds him to general tendencies. Holguin, tn. in Oriente prov., Cuba; in a healthy, hilly region, 60 m. N.W. of Santiago de Cuba. Sugar and tobacco centre. Pop. 135,000.

Holiday Fellowship (Ltd.), The, venture in social service founded in 1913 by T. Arthur Leonard (q.v.), whese objects are to provide for the healthy enjoyment of leisure; to encourage love of the open air; to promote social and international friendship; and to organise holiday making and other activities with these objects. Starting with two Guest Houses—one in ing and other activities with these objects. Starting with two Guest Houses—one in North Wales and the other in the Lake District—it developed steadily, and by the summer of 1939 was providing more than 90 guest houses, walking tours, and other forms of community holiday in various parts of this country and abroad. Activities on the Continent took parties of guests into various countries where special endeavour was made to establish contact with the inhabs. of the places visited, and people from other countries were welcomed at Fellowship Centres in this country, both as guests and as memthis country, both as guests and as members of the staff. A principal feature of Fellowship holidays is the daily excursion, under competent leadership, so organised as to introduce guests as fully as possible both to the beauties and to the historical. literary, and other interests of the dist. literary, and other interests of the dist. Tramping on mountain, moorland, and footpath is particularly encouraged. Members of the Followship have also organised, in various parts of the country. some 80 rambling and social clubs, under the title of 'Lata' Troups.' For legal and business purposes, the H. F. is registered under the Industrial and Provident Societies Act, 1893, with registered office at 142 Great North Way, Hendon, London, N.W. 4. The capital required for its operations is subscribed in the form of £1 don, N.W. 4. The capital required for us operations is subscribed in the form of £1 shares, the holding of one or more of which, up to a maximum of ten, constitutes membership of the organisation. The work of the organisation is controlled by a General Committee, elected by the

shareholding members.

A kindred organisation to the H. F. is the Co-operative Holidays Association.

Fallow field, Munchester.

Holidays, see BANK HOLIDAYS.

Holidays, see Bank Holidays.
Holinshed (or Hollingshead), Raphael (c. 1520-80), chronicler, is said to have been a native of Cheshire. He came to London early in Elizabeth's reign, and was employed as translator in Wm. Wolfe's printing-office, rendering great assistance to Wolfe in the compilation of his Universal History; indeed H. wrote most of the description of the Brit. Islex. Wolfe, however, died before the work was completed, and it was consequently abridged, and appeared in 1578 as the Chronicles of England, Scotland, and Ireland. A second enlarged ed. was pub. in 1587, but did not meet with the approval of Queen Elizabeth, and in 1808 a reprint of the original was pub. in six vols. The Chronicles are valuable for their historical information, and are interesting as being the source from which the Elizabeths and are interesting as being the source from which the Elizabeths and in successions. as being the source from which the Eliza-

there is a fundamental factor operating in the universe towards the creation of wholes. H. embraces biology, psychology and physics, and claims to be necessary to the proper understanding of evolution. H. is something akin to the natural-istic conception of physical science, but that from beginning in realism it ends in idealism. See J. C. Smuts, Holism and Evolution, 1926.

Holkham, vil. of Norfolk, England, near the N. coast, 2 m. from Wells. It is famous for its hall, seat of the earl of Leicester, built in the eighteenth century in the Palladian style. The estate was bought in 1659 by John Coke, son of Sir Edward Coke, and here the earl of Leicester, known as Coke of Norfolk, carried out experiments of great benefit

to agriculture.

Holl, Francis Montague (1845–88), Engportrait painter, b. in London. He became a student at the Royal Academy schools in 1861, and first exhibited in 1864. After this date he was a regular contributor to the Royal Academy, but he did not begin portrait-painting until 1876, when he undertook a portrait of Mr. G. C. Richardson. This picture was exhibited in 1878. Among his best portraits are the Prince of Wales, the duke of Cambridge, Sir George Stephen, and Mr. W. E. Gladstone. R.A. 1883.

Holl, Karl (1866–1926), Ger. theologian and church-historian; b. at Tübingen. Assistant in Berlin Academy of Sciences, 1891; lecturer, univ. of Berlin, 1896. Prof.: Tübingen, 1900; Berlin, 1906. Rector of Berlin Univ. 1925. His Gesammelte Außeitze zur Kirchengeschichte Holl, Francis Montague (1845–88), En

Gesammelte Aufsätze zur Kirchengeschichte (1927-28) contains a remarkable study

of Luther.



HENRY FOX, FIRST BARON HOLLAND

as neing the source from which the Eilza-bethan dramatists drew their plots. Indeed, nearly all Shakespeare's historical plays, as well as *Macbeth, King Lear*, and Cymbeline are based on H.'s work. Holism (from the Gk. Shot, whole) name given to the philosophy which holds that

remained until 1755, when he was appointed secretary of state. He resigned in the following year, but in 1757 became Paymaster-General of the Forces, and in this lucrative office he amassed a vast fortune, by methods, it is said, not the most scrupulous. He took no active part in politics after 1763, when he was created

Holland, Henry Richard Vassall Fox, third Baron (1773–1840), Eng. statesman, b. at Winterslow House, Wittshire, only son of Stephen, second Lord H., and of Mary Fitzpatrick daughter of John. Earl of Upper Ossory. He was brought up by his metarnal grandfather and units of Upper Ossory. He was brought up by his maternal grandfather, and uncle, Charles James E., to whom he was indebted for his love of classical literature, also his strong Whig principles. He was educated at Eton and at Christ College, Oxford. After doing the grand lour, he returned to England in 1796; took his seat in the House of Lords, and made his maiden speech in the debate on the question of the Assessed Taxes Bill. He pub. Life and Writings of Lope Felix de Vega Carpio (1896), and Three Comedies from the Spanish (1807). In 1814 he visited Murat at Naples, and in 1816 strongly opposed the Bill for the detention of Napoleon as a prisoner of war. In 1830 he was chancellor of the duchy of Lancaster, which post with two short. Lancaster, which post with two short intervals, he held until his death. He wrote Foreign Remaniscences, and Memoirs of the Whig Parly during my Time, both ed. by his son, Henry Edward, fourth Lord Holland, See T. Macaulay, Essay on Lord Holland, 1848.
Holland, Sir Hanry Scott (1788-1873)

on Lord Holland, 1848.
Holland, Sir Henry Scott (1788-1873),
Eng. physician and writer, b. at Knutsford, Cheshire. He was appointed physician-in-ordinary to the Prince Consort
in 1840, and to Queen Victoria in 1842.
His pubs. include: Travels in Albama
(1815), Medical Notes and Reflections
(1839), Chapters on Mental Physiology
(1859) and Recollections of Part Life (1871)

Magdalen colleges, Oxford. In 1874 he was appointed Vinerian reader in Eng. law, and prof. of international law and diplomacy at Oxford. He sat on the Royal Commission of 1903-05 to inquire into the supply of food in time of war, and was cont as picnipotentiary to the Geneva

was sont as plenipotentiary to the Geneva Conference of 1906. His pubs, include: Elements of Justinian (1873-81), Studies in International Law (1898), Laws of War on Land (1908), Proposed Changes in the Law of Price (1911), and Zouche's Jus Feciale (1911). Knighted 1917.
Holland, or The Netherlands (the name 'Holland, 'properly speaking, covers only two of the provs.), kingdom with a long coast-line lying between 50° 43 and 53° 38' N. lat., and 3° 22 and 7° 16' E. long. It is bounded on the N. and W. by the N. Sea, on the S. by Belgium, and on the E. by Germany. Its greatest length for N. to S. is 195 m., and greatest breadth, 110 m. Its land area is 12,868 sq. in. and total area 15,765 sq. in. Pop. 9,542,600. It is the most densely populated inajor It is the most densely populated major state in Europe.

It is the most densely populated major state in Europe.

The provs., with area and pop. are: Gromagen (898 sq. m., pop. 447,400); Friesland (1325 sq. m., 256,600); Drenthe (1029 sq. m., 269,700); Overlissel (1301 sq. m., 633, 500); Guelders (1939 sq. m., 1,019,700); Utrecht (52b sq. m., 544,600); N. Holland (1081 sq. m., 1 759,400); S. Holland (1130 sq. m., 2,258,500); Zeeland (690 sq. m., 258,500); N. Brabant (1920 sq. m., 1,168,500); Linburg (816 sq. m., 677,600); Noordostelijke Polder (183 sq. m., 1800). Linbabs, without fixed residence, 48,400. The prin. tas. (over 25,000 pop.) are: Amsterdam the commercial cap. (798,300), Hotterdam (637,100), The Hague, scat of gov. and the official cap. (523,700), Utrocht (183,200), Hotterdam (637,100), The Hague, scat of gov. and the official cap. (523,700), Eindhoven (132,200), Groningen (155,700), Eindhoven (132,500), Groningen (105,900), Euroched (100,100), Arnhem (96,000) Leyden (86,400), Breda (1815), Metheal Notes and Reflections (1839), Chapters on Mental Physiology (1852), and Recollections of Plast Life (1871)
Holland, Henry Scott (1847-1915), clorgy man of the Church of England.
Educated at Eton and Balliol College, (28,600), Leouwarden (75,600), Masstricht Educated at Eton and Balliol College, (27,800), Schiedam (89,000), Masstricht Coriord. Took holy orders in 1872; (67,500), Deltt (61,600), Herrlen (56,300), 1884-1910; of Christ Church from 1910, and at the same time Regius prof. of divinity at Oxford. Edutor of the Commonwealth. His pubs. Include: Loque and Life (1882), Creed and Character (1906), and Fibres of Faith (1910).

Holland, Philemon (1552-1637), called Values (1906), and Fibres of Faith (1910).
Holland, Philemon (1552-1637), called the translator-general of his age, b. at Chelmsford, Essex. Baving obtained his M.D. degree at Cambridge (1591), he practised medicine at Coventry, and became headmaster of the Free School there (1928). Itis fame rests on his trans. of Pilnys Naival Hispory (1601), Plutarch's Morals (1603), Xenophon's Cyropoxias (1632) and other classical works. He also pub. an Eng. version of Camden's Britannia (1610).

Holland, Str Thomas Erskine (1835-1936), Eng. Jurist, b. at Brighton; son of Rev. Thomas Agar H., rector of Poyntages.

Here at a later day, the same reac chained the tyrant ocean and his mighty streams the tyrant ocean and his mighty streams.

into subserviency, forcing them to fertilise, to render commodious, to cover with a beneficient network of veing and arteries and to bind by watery highways with the furthest ends of the world a country by nature disinherited of its rights. A region outcast of ocean and earth, wrested at last harrage of 30 km. (1925), the Wieringen-Friesland outcast of ocean and earth, wrested at last harrage of 30 km. (1930); the Wieringen-Friesland outcast of ocean and earth, wrested at last harrage of 30 km. (1932) and the Noordo-from both domains their richest treasures. A race, engaged for generations in stubborn conflict with the angry elements, was unconsciously educating itself for its great the struggle with the still more savage deepotism of man. In these words Motley sketches the cosmo- and techno-drama of water lake. The maintenance of the



A DUTCH VILLAGE BUILT ON SHELTERING COASTAL DUNES Zoutelande, Isle of Walcheren

The features of the lowthe Dutch folk. tne Dutch folk. The features of the low-lying Dutch landscape are too well known to need description but the placid aspect of the waterways, studded with the or the waterways, studded with the peculiar windnill with pumps for regulating the aipply of water gives no indication of the inmittgated toil that is represented by the dykes and embankments which hold the sea in check and keep canals and rive, from overflowing their banks. Mechanical drainage, however, has now practically ousted wind power. has now practically ousted wind power. The people have a waying that 'God made the sea, but the Hollander made the land,' and as far as their own land is concerned, that is perfectly true. They have turned the marshes formed by the delta of the Maas, the Rhine, and the Scheldt, into arable land and have reclaimed vast tractfrom the sea. The lands thus reclaimed are called noiders and are highly valued.

canals which run like a network all over the country, linking up riv. and lake, and the reclamation and drainage of the land are the work of a special public dept. called the Waterstaat, and involve the called the Waterstaat, and involve the country in an expenditure of considerably more than 2500,000 a year. Looks were in use on canals early in the fourteenth century. The largest look in the world, that at Ymuiden, on the canal connecting amsterdam with the sea, was opened by queen Wilhelmina in 1930. The people of Holland have many characteristics in common with the Brit. The Dutch are a freedom-loving people, inventive and industrious. They have all the courageous qualities of seafaring folk, and have proved themselves as a nation and as Mass, the Rhine, and the Scheldt, into proved themselves as a nation and as arable land and have reclaimed vast tractions the sea. The lands thus reclaimed to gain or retain liberty. Among her are called polders, and are highly valued. In 1918 an Act was passed to form a new skerck, Schouten, Lemsise and Tasman, prov. by damming and draining parts of Their colonial possessions, like those of Great Britain, are vastly out of proportion to the size of the mother country. Their E. Indian possessions include Java and Madura, Sumatra, the Moluccas, Celebes, Timor, parts of Borneo, and New Guinea; in the W. Indies, Surinam and Curação are their prin. possessions. After the defeat of the Jap. in 1945, however, the Indonesians rose in revolt against their Dutch overlords, demanding countlets Indonesians rose in revoit against their Duich overlords, demanding complete autonomy (see below under History; and DUTCH EAST LYDIES; INDONESIA; JAVA. The Boer nation are descendants of sixteenth-century Dutch colonists in S. Africa.

Communications.—The favourable situation of Holland, half-way between the North Cape and the straits of Gibraltar. on the most navigated sea of the world at the mouths of excellently navigable rive. communicating with the whole of Central Europe by a system of canals, makes the Europe by a system of canals, makes the country a natural gateway, as well as an emporium and centre of commerce. In this way two seaport tas, came into existence which play a very important part in the world's trade—Rotterdam and Amsterdam. The equipment of docks, quaye, store-houses, loading and unloading installations in both harbours is completely adapted to world shipping. Rotterdam, before the Second World War, depended for 75 per cent of its trade on land traffic to Germany and Switzerland and today the capacity of its docks exceeds the demands upon it because of the decline in the Rhine trade. In 1939 the number of Dutch vessels navigating the decline in the Rhine trade. In 1939 the number of Dutch vessels navigating the Rhine was over 6500, being 51 per cent of the total Rhine navigation. The country itself is intersected by a number of riva, and canals, linked to the water and railway transport system leading to the heart of Europe. The other Dutch ports, heart of Europe. The other Dutch ports, although smaller, have very modern equipment and good communications with Central Europe. N. of Amsterdam lies Zaandam, the port of the highly industrialised Zaan dist. The N. E. port of Delfziji specialises in coastal trade, notably to Seandinavia and England, as does Harlingen in the N.W. from which a number of regular services to England are maintained. Terneuzen, on the estuary number of regular services to England are maintained. Terneuzen, on the estuary of the R. Scheldt, is important chiefly in that it serves as a port to the local industries. On the map, it is observed that Holland is situated at the junction of important high roads of economical significance. England lies across the N. Sea. Beigium and France must Holland in the S., Switzerland and Czechoslovskia are also easily attainable. Central Europe are also easily attainable. Central Europe begins on her E. frontier and in the N are the Scandinavian countries. The inter-national airport of Schiphol near Amsterdam, is the central station for airlines flying in all directions of the compass even as far as New York, Rio de Janeiro, Cape Town and Batavia. Sev. important international airlines use the well-equipped ing in all directions of the compass even as far as New York, Rio de Janerro, Cape as far as New York, Rio de Janerro, Cape Town and Batavia. Sev. Important international airlines use the well-equipped landing-field at Soluphol, while it plays an important part also as a night-mail airlines (K. L. M.) have regular services to the most important this. in Europe.

Railways.-In Holland the system of Rattways.—In Holland the system of railways is not as congested as in some other W European countries, as a great share of the conveyance of merchandise is by inland navigation. As the railway train is mainly a passenger traffic, its speed surpasses that of neighbouring countries. A great part has been electrified. During the Ger. occupation in the Second World War the Dutch railways suffaced much by the great countries. the second work was the inter rainways suffered much by the war operations. After the liberation the situation of the railways was chaotic: hardly any locomotives were left, whereas the few that remained were so badly damaged that at the could not be used. Because were first they could not be used. Passenger-carriages and goods-vans had been trans-ported to the East, rails had been taken away as well as the overhead wires of the electric railway system.

Industry in Holland absorbs about 40

per cent of the working pop., which is rather a curious fact, taking into consideration that the country itself is short of raw materials. Iron-ore, wood and oil must be imported from oversess, only in the S. is coal obtained in considerable quantities, which covers part of the home requirements. Potential oil-fields are be-ing exploited in the E. part of the country. The output of the salt-mines in the E. can and even allows a considerable export of this commedity. The favourable loca-tion of ilolland makes it possible on the one hand for raw materials to be easily imported, and on the other hand for the industrial products to be as easily exported to all parts of the world. Conexported to all parts of the world. Con-sequently coupled with the experience and skill of the workers. Dutch industry is primarily one of retining, in which the raw materials are processed into products for export as may be exemplified in its superphosphate and oil-works. In normal times 70 per cent of the superphosphate production was exported. The oil fac-tories either delivered the oil obtained from copra and seeds to the margarineand soap-works or they exported the final product directly to foreign countries. Blast furnace works are estab. in Y muidon. Here imported ores are pro-cessed, the greater part of the iron being cessed, the greater part of the ron being again exported. Before the war Java furnished about 90 per cent of the world's production in cinchona, which for the greater part was used by Dutch industries. This was also the case with cocoa, rice and tin production. For non-tropical products, Holland was an important world supplier. The various breweries, the margarine and sonn-works as well as the gin and liqueur distilleries may be mentioned in this respect. The great labour productivity of the Dutch people has caused industries to be developed within the contraction. to be developed which demanded specialised labour, such as the diamond industry,

tries, handicrafts have flourished. The fine handswork of gold and silver smiths and other artificers, as well as the products of the furniture maker's, glazier's and industrial arts find their way to both the home and foreign markets together with industrial products

Mining — In the S., Holland possesses 12 mines all with modern equipment four the property of the gov In the years preeding 1940, the coal production amounted to dout 13 million metric tons, per annum. The Dutch mines supply a per annum The Dutch mines supply a type of coal best suited to industrial pur poses Before the Second World War part of the coul destined for industrial use was exchanged abroad for household coal After the liberation the production of coal owing to various causes such as under nourishment of the miners, lack of material enlistment of mine workers into the ser vices, the departure of foreign labourers, and labour conflicts which arose all over the world Through shortage of ship ping space the elimination of the Ruhr as a suppler, t. de line in the output of foreign collieries and miners' strikes abroad, the imports of coal were not sufficient to cover the requirements of the industries and private use However, the production rose from 325,000 tons per month in 1945 to 810,000 tons per month in 1917

As a secondary by product to coal mining reference can be made to coke and mining reference can be made to coke and briquette factories, chemical factories for the production of nitrogen, hydrochloric acid, chloride of lime, coal tar products, etc. The chemical works which manuf secondary products of coal have an important share in the industrial production of Holland. Thus, important industrial have been ested such as those of artificial manufactured and playing along the production of Holland. manure playtics dyes, phurmaceutical products, alcohol, lubricants, scap, artificial silk, perfumes, road covering materials, maccicides, saccharm and disinfectant. These articles form an important part of Holland's export It can be expected that the young industry, which is so closely linked up with coal mining, will considerably expand in the future

Agriculture and Horticulture — Owing to the dissemination of excellent agrarian information, and extensive research work, Dut h agriculture has succeeded in gaining, qualitatively, an important place in ing, qualitatively, an important place in the world Because of the density of the agricultural pop Dutch agriculture had to specialise in the production of fine agric, such as valuable seed crops, vegetables and fruit, bulbs and decorative plants. In addition Holland Ho

powder are known everywhere. About the products from the dairy industry were destined for foreign markets.

Agriculture and farming brought into existence the important industries of canned foodstuffs, potato flour and straw board. Heades the manufacturing industries, bandlerafts have flourished. The live the following figures before the which makes it possible to bring the above mentioned products fresh on the foreign mixts. Even aeroplanes are sometimes used for this purpose. The importance of the export of agric, products is shown by the following figures before the second World War Holland exported from 200,000 to 350,000 tons of potatoes; in no other country in Europe did the export of potatoes exceed 100,000 tons were exported against a bare 20,000 tons from other countries. The export of condensed milk amounted to 170 000 tons, Denmark only once reached a quantity of 20 000 tons and the exports of other countries were even far below this amount. The importance of Holland's export is also shown by the fact that of the total production of bulbs, treas, shrubs, vigetables and fruit, 90, 90 and 50 pc; cent respectively (according to their values) were expectively (according to their values) were expectively duction of bulbs, and 50 pc; cent respectively duction of bulbs, and 50 pc; cent for the total value of butter, cheese and milk powder produced was exported in the server value of butter, cheese and milk powder produced was exported in the same produced was exported in the same year export figures for poultry (for con sumption purposes) and egg production amounted to 28 per cent and 50 per cent respectively of the total value, although firthisers and fodder had to be imported Sein from this point of view it can be castly understood why Holland takes the fifth black among the wheet travertire. fifth place among the wheat importing untities, fourth place for the import of harly and third place for corn This implies therefore that Holland is an imortant buyer for grains on the world market The high standard of futch agriculture is also evident by harvest results, the se being considerably above the iverage for Europe in 1939

I isheres.—Fishing is one of the oldest Dutch trades which throughout the ages Dutch trades which throughout the ages has made important contributions towards the national income. The herring industry is intensively developed and bride 1940 Holland had a very modern hering fleet. In 1938 the herring catch amounted to 100,000 tons in weight which is presented a value of over £800,000 Many shaps were lost through war operatures or were weight hat the loss for year tuns or were rebuilt by the viers for war puposes in May, 1916, however, thanks to the initiative of shipping-companies and ashermen, a herring fleet again sailed tion Scheveningen for the first time since

the beginning of the war \remarkable activity has developed in to exploitation of modern refrigeration slaps. The whaling industry which in numer centuries used to be of great mputance in Holland, but decimed in later cars, has been reorganised. There is

portance in Holland, but useful. There is also oyster culture in the prov. of Zeeland. Defence.—The pre 1940 Army was composted partiy of volunteers and partiy of intuity of men drawn by lot for the years' service, and kept on a peach footing of nearly 400,000. The colonial army numbered mearly 40,000, of whom about 14,000 were Europeans. The chutterij are a kind of soldier pol aman who, in tames of war, can be mobilised. The armed forces are

Dutch Navy consists of an excert aircraft of the States-General and confirmation of carrier, Karl Doorman (13,800 tons), 2 the Bill by a two-thirds vote of the new cruisers of 3350 tons displacement and a armament of 4-in, and 6-in, guns; 7 Justice is administered by the High an armament of 4-in. and 6-in. guns; 7 destroyers, 12 submarines, 4 minelayers and other craft. Many of the ships of the pre-war Navy were assigned to the E. Indies Fleet. Both Army and Navy have their own separate Air Force.

Government and Justice.—The gov. of H. is a limited and hereditary constitutional monarchy. The executive power of the State belongs accurately to the

of the State belongs exclusively to the sovereign but is exercised by a responsible council of ministers. The legislative council of ministers.

Justice is administered by the High Court of the Nethorlands (Court of Cassa-tion), by five courts of justice (Courts of Appea), by nineteon dists tribunels, and by sixty-two cantonal courts. Trial by by sixty-two cantonal courts, Trial by jury is unknown. The Cantonal Court, which tries minor offences, is consituted of a single judge; the more serious cases are tried by the dist. tribundls, formed, generally, by three judges; the counts are constituted of three and the High Court of five judges. All judges are appointed



AMSTERDAM The Voorburgwal Canal and the Church of St. Nicolaas

rests conjointly in the sovereign and states-General. The latter, or Parlia-High Court from a list prepared by the ment, is bi-cameral: the list or upper scomposed of fifty members, only be a High Court decision.

Culture, Education, and Italian.—In second chamber of 100 deputies elected directly. There is universal suffrage and the system of election is by proportional representation. Deputies are elected for four years and retire in a body, whereas the first chamber is elected for 6 years, one-half retiring in rotation every three years. The gov. and the second chamber only may introduce new Bills, the functions of the water sharplest palar satisfact. tions of the upper chamber being restricted to approval or rejection, without power of amendment. The meetings of both chambers are public, though each may, by majority decision, form itself into a private committee. The ministers may attend the meetings of the States-General,

only be a high Court decision.

Culture, Education, and Religion.—In practically every domain of art and science the Dutch have contributed a signal share. Although comprising only a small percutage of the European population, the Dutch people have on the whole an honourable share in European. culture and in some instances, have even made a preponderate contribution. In New York and Paris, in the National Callery in London as well as in the Hermitage in Moscow, the pictures of Rembrandt, I rans Hals, Ruysdael, and Johannes Vermeer bear witness to the clory of Duth meriting in the eventeenth glory of Dutch painting in the seventeenth century. Of the painters of a later perod Van Gogh and Breitner have especially become famous. The Amsterdam Symphony orchestra (Conzertgebouw) is among the best orchestras in the world. but unless they are members, they have become famous. The Amsterdam Symonly a deliberative vote. Alterations in the Constitution can be effected only by a among the best oracleostras in the world. Bill giving reasons, followed by dissolution.

anct. times onwards according to a deanct. times onwards according to a de-finite scheme, is from an architectural point of view one of the most beautiful cities in the world. The seventeenth-cen-tury buildings and the modern quarters vie in beauty and stateliness, thereby giving an excellent example of Dutch architectural taste. The numerous monu-mental churches all over the country with-in where wells are interestic surfitual life in whose walls an intensive spiritual life flourishes, also form a lasting reminiscence of the skill of Dutch architects (see further under DUTCH ART). The names of Erasmus, Huig van Groot (Grotius), Spinoza, are well-known names in hist. Stevin, Huygens, Swammerdam and Van Leeuwenhoek excelled in the technical sciences. At the many technical institutes and laboratories scientific pioneering labour has been effected and continuous research work is being done to find new methods and improve results. Since the 'Nobel' prize was instituted, it has been awarded on sey, occasions to Dutchmen: the scien-Lorentz, Zeeman, Van der Waals and Kamerlingh Onnes for physics, Einthoven and Eykman for medical science and Asser

for peace.

H. has a well-founded reputation for a n. nas a well-founded reputation for a superior system of education. It is compulsory under National Law (since 1920) for students to attend school up to their fifteenth birthday, misst students however avail themselves of an excellent system of some laws observed.

system of secondary schools.

The anct. univs. of Amsterdam Leyden, Utrecht, Groningen have been supplemented by the Rom. Catholic Univ. of Nilwegen and the Calvinist Univ. of Amsterdam: there are also three univs. specialising in agriculture, technical subjects, and economics. There are naval and military colleges at Bredu, and technical colleges at Delft.

Entire liberty of conscience is granted to the members of all religious confessions. to the members of all religious confessions. The royal family and a great part of the people belong to the Reformed Church. By the census of 1930, the adherents were: Dutch Reformed Church, 2,732,000; other protestants, 877,000. Catholics, 2,890,000; Jansenists, 10,000; Jews. 112,000; other creeds or those of none, 1,314,000 (other, 169,600, no religion, 1,144,400).

The language of H., though akin to both Eng. and Ger., has yet a separate identity. In the eleventh century the anct. Dutch dialects were spoken in a wider area than

dialects were spoken in a wider area than that now occupied by the present H. and Flanders, and old Dutch (or Flemish) is still to be heard among villagers in the N. of France. Early in the fifteenth century literary clubs were founded by the Rederlikers, or lovers of letters, who met together to study literature and plays. To these clubs modern Dutch owes its origin. From the twelfth to the sixteenth century

during the eighteenth century, but uniform speaking of the 'Standard' Netherlandish is still one of the aims of Flemish teaching in particular. In 1946 the spelling of Dutch was simplified after decades of discussion led by the fervid promoter,

of discussion led by the fervia promotes, Ipr. Kollewijn.

The liberty of the Press brought much foreign printing to H., and the Gazette de Leyde, which distributed news to all parts of the world, was in existence from 1680–1814. Illiteracy hardly ever occurs in H. Knowledge of foreign languages is customers rather than exceptional 8 fact customary rather than exceptional a fact common in small countries with export mrkts, and forced on the Dutchman by the fact that their own language is un-known to most of his customers. Longwave radio stations have been estab. at Hilversum and Hulzen, and a shortwave station at Zoesen, which is used largely for transmitting news to the Dutch colonies.

Librature.—During the late middle ages literary activity was concentrated almost entirely in the Flemish part of the country. Towards the end of the exteenth century, the Dutch language proper was perfected, owing this in part to national consciousness aroused by the religious persecutions in the S. Netherlands,
dominated by Spain. With the Reformation in H., the young independent country, owing something also to the migration of many Flemish Protestant families
to the N., became the centre of literary
life. The most brilliant writer of this
period, generally called 'De gouden ceuw'
(The golden century), was Joost Van den
Vondel (1587-1679), an outstanding poet,
whose successful tragedies are still
regularly performed. Important contemporaries are the popular allegorist and
moralist Jacob Cats (1577-1660) and the to national consciousness aroused by the remoralist Jacob Cats (1577-1660) and the more satiric humanist C. Huygens (1596-1687). P. C. Hooft (1581-1647) is the author of beautiful erotic poems and of one of the best comedies of that time and G. A. Bredero (1885-1618) depicted in his moral pieces vice in rude terms. This rub classical period of the Dutch literature ended in the last decades of the seven-teenth century. J. Luyken (1619-1712), a melancholic mystle, may be considered to be the last important poet of the goiden century. In the eighteenth century literature decined, being mostly mutative of Fr. models, but a major exception is W. Langendijk (1683-1756), writer of numerous and good farcical comedies. The first decades of the ninecomedies. The first decades of the nine-teenth century witnessed the rise, of romanticism. Willem Bilderdijk (1756-1831), A. O. W. Staring (1747-1840) and H. Tollens (1780-18.6) are the most characteristic figures of this transitional period. I. da Costa (1798-1860) trans, and introduced Fr. and Eng. romantic pacts to Duich readers. The romantic movement in H was encouraged by a From the twelfth to the sixteenth century per there was no unity either in the written or in the spoken language. A trans. of the Bible ordered by the Dutch Gov. in ed. by Bakhulzen van den Brink (1810-65) and carried out by the best Dutch and Flemish philologists further laid the and Flemish philologists further laid the foundation of modern Dutch. A uniform mode of writing was achieved in all provs.

national literature. Van Lennep (1802–1868) who first trans. Walter Scott into Dutch and wrote some remarkable historical novels, enjoyed great esteem, while important contemporary novelists were Limburg Brouwer (1795–1847). Anna Bosboom-Toussaint (1812–86) and Alberdingk Thilm (1820–89). At this time a group of brilliant writers, including especially N Beets (1814–1903) and P Hasebroek (1812–96) were founding their work on Eng. models but revealed their native originality in their observation of Dutch life. In 1860 the Nederlandsche Speriator appeared, a weekly seview associated especially with M P Lindo (1819–1877), an Englishman by birth and translator of Fielding and Sterne, and C Vosmaer (1826–88), an art critic and poet. In 1860 also was pub. Max Hawelcar. This book was an indictment of Dutch coloniva-1860 also was pub. Max Haveloar. This book was an indictment of Dutch colonisation written by Eduard Douwes Dekker (1820-87) under the pseudonsm 'Multatult.' It was undoubtedly the most important book of the century, and Dekker had a great influence on the succeeding generations, who greeted in him their pioneer. Those who derived from Dekker and bit sensettonsl were weten to note. pioneer. Those who derived from Dekker and his sensational work were the poets W. Kloos (1859-1938), F van Eeden (1860-1937), A Verwey (1865-1937) and the sensitive Van Deyssel (b 1864). They were ferrent adherents of 'art for art's take' and associated in a periodical De Neuver Gids (The New Guide), opposing them to the super annuated Guide. His that publication in 188, marked another. first publication in 188, marked another literary event in the second half of the interary event in the second that of the nineteenth century, inaugurating a prolific movement in which the poet H Gorter (1864-1927), the novelists L. Conperus (1863-1923) and J van Loov (1855-1930) and the dramatists H Heyermans (1864–1924), and Jan Fabricus (b 1871) stand out as pre-eminent Later (b) 1871) stand out as pre-eminent Lator writers are I Querido (1873 1932), author of naturalist novels and the poets P C Boutens (b 1870), J H. Leopold (1865–1927) and Henrietts Roland Holst (b 1869) and the novelst A van Schendel (b 1874). Among the poets of the latest decedes should be noted. decades should be noted. Adama van Schelterna, G. Gossaert, J. C. Bloem, J. Greihoff Wermeus Buning J. Sauerhoff, H Marsman, J Engelman and A Donker A Markinan, J Engelman and A Dollar A mong the novelists are numbered. A. Van der Leenw, N. Van Suchtelen, A Coolen S Vestdijk, J Fabrichus Jr., F Borderwijk, A Den Doolaard, A Helman, and T. de Vries. See also Flemish LITFRATURF

History—The inhabs, of the Nether-lands are descendants of a people called

fendal system the country was divided into small sovereignties. In the year 922 Kirk became count of H, and the other Kirk became count of H. and the other Netherland provs. such as Namur, Hainault, Limburg, and Zutphen, were divided between various barous and counts, autocratic rulers, owning allegiance to the dukes or earls of Lorraine, Brabant, and Flander. Holland, Zeeland. Utrecht, Overlissel, Groningen, Drenthe, and Fuesland, which were afterwards to four the United States of the Netherlands, were chiefly under the rule of the counts of Holland and the bishop of Utrecht. It was during the five dismal centuries of feudalism: that cuties began to spring into unportance and cities began to spring into unportance and the rise of a world-wide commerce began. In 1381 the Netherlands became the property of the duke of Burgundy, and a little more than a contury later were nuited to Spain under Charles V The struggle for freedom and for civic and religious independence that was to last so long had already begun and came to a crisis in the reign of Philip II of Spain in the middle of the sixteenth contury, the immediate causes being the imposition of the Inquisition with all its horrors upon the people, and the maintenance of the contract once of a standing army. Win prince of Olange, known as Win the Silcut, was the king's lieutenant in Holland, Zeoland, and I trocht, and to his devotion to the cause of the rights and liberties of the people the republic ultimately owed its existence It would cover too much space to give even an outline of the story of the war even an outline of burghes against political and religious tyranny. By the capture of Briel in 1572 Spain received the first everyea, and the people who had been ground into dust began to hope. In 1579 the Union of Utiecht was formed, by which the N. provs. banded themselves fourther to people spain and in 1581 the which the is proved balance and in 1581 the Notherland declared their freedom Win's assassination 1584 did not present the continued success of the people ignist the efforts of Philip to regain the dost prove. He was beaten again and again at sea, and his successor was obliged to sue for a cessation of arms for twelve These years enabled the Dutch to recoup themselves for losses by attention to trade. The war, renewed after the armistice, was continued until 1648, when, by the treaty of Munster Spain recognised the independence of the Netherlands.

While this protracted struggle was in progress, the Dutch were making themselves masters of the sea | heir ships were in every ocean | The E | India Comlands are descendants of a people called by the Roms the Batavi, who lined on an is, between the two branches of the Rhine, and the Fridans who dwelt further N They are decreased as a hardy, lio-pitable, faithful folk, who hunted fished, or led a pastoral life. Their religion was simple, and they were chaste and honourable. The Rom rule lasted until the fourth century, when the Franks overran the country. Charlemagne's dominion in the sighth century extended to the Netherlands, and he built a palace at Nijmegen on the Waal. Upon the estab of the destroying ships, in 1667. Then followed the war in which France and England were united against the republic; and which but for the Dutch prowess at sea, night have ended disastrously for the Netherlands. The political struggle be-tween the De Witt faction and that of the prince of Orange ended with the terrible death of the brothers De Witt and the triumph of Wm of Orange, who secured the friendliness of England by his marriage

were formed into the kingdom of the Netherlands. This union was not satisfactory: there were temperamental and religious differences between the people that were not easy to harmonise. In 1330, therefore, the S. provs. second and Belgium was formed into a separate kingdom. The decline of H. as a world-power after the seventeenth century would seem to have been due to some extent to the diverse Celtic and Ger. elements in the



National Gallery, London

THE PRACE OF MUNSTER, MAY 15, 1618, BY GERARD TERBURG

The scene in the Rathaus, Munster, Westphalia. Lett to centre, raising the right hand, are the six delegates of the Dutch United Provinces: W. Ripperda for Ovenjssel, F. de Doña for Groningen, G. van Reede for Utrecht, A. Pauw for Holland, J. van Matanesse for Friesland, and B. van Ghent for Gelderland Centre tight, their right hands on the Gospels, are the plenipotentiaries of Philip IV. of Spain.

with Mary of York. This led to his subwith mary of York. This led to his subsequent elevation to the throne of England, under the title of Wm. III. Eng. and Dutch then fought side by side in indicting defeat upon Louis XIV. of France. The treaty of Utrecht in 1713 concluded the war, and also the period of Holland's

greatness as a world power.

The close of the eighteenth century saw

pop.—elements dissimilar in their tendencies and always difficult to reconcile. The prin. events in the hist. of the kingdom since 1830 are, briefy, the following: In 1410 Wm., for political reasons abdicated an favour of his son, who, in 1848, granted a new constitution to the people. The question of the duchy of Luxemburg (from The close of the eighteenth century saw the Netherlands overrun by Napoleon's in 1868 by making it an independent state. Louis Bonaparte was made king of Holland in 1806, but resigned four years later and the country was attached to the Fr. empire. During these changes the Orange family had been obliged to make their family had been obliged to make their secape, but on the fall of Napoleon they were recalled, and the N. and S. provs. (b. 1909) became hoiress to the throne to 1.15 a title of the king of H.) was settled in 1868 by making it an independent state.

which she succeeded in 1948 (see below). The Palace of Peace, to which many nations contributed, was opened in 1913. It is situated at The Hague. H., after the Belgian secession from the joint king-dom set up in 1814, played little part in

European hist.

European hist.

In the last decades of the nineteenth century there arose a vigorous movement of material and intellectual expandion, a movement which had by no means spent its force even after the shocks of the First World War, which naturally affected H.'s overseas trade. In the inter-world war period, new industries were still coming into existence, as e.g. the Phillips electrical works at Eindhoven, the rayon industry at Breda; while, at the same time, agriculture, particularly cattle breeding dairy farming, and cularly cattle breeding dairy farming, and horticulture, all of which industries in the previous decades had begun to make good previous decades nad begin to diske good use of new methods of organisation and scientific research, greatly prospered. Again, the coalfields of S. Limburg, which owed their later development to the fact that during the First World War the supply of Ger coal became restricted, were exploited with considerable success: while the great scheme for the reclausation. while the great scheme for the reclamation of the Zuider Zee, so as to add a new prov. to the country, was launched (1924). (See supra). During the First World War H. remained neutral and consequently was not so seriously affected by it as the beligerent countries. The ex-Kaiser Wilhelm and the ex-Crown Prince Kaiser Wilhelm and the ex-Crown Prince found refuge at Amerongen when they fied from Germany in Nov. 1918. The ex-Kaiser settled at Doorn. Although faced with the problems arising out of the war (1914-18), the Dutch Gov. persevered with the policy of political and educational reform to which it was committed by the previous Liberal and Radical govs. of Kuyper and Bos. Probably the quickened sense of national solidarity accelerated the rate of social reform: for 1917 the gov had carried out its proin 1917 the gov. had carried out its programme. Universal suffrage and proportional representation were introduced: aona representation were introduced:
at the same time, the principle of absolute
equality with regard to the public exchequer of 'public' undenominational
education and 'private' denominational
education, was conceded in full and incorporated in the Constitution.

perated in the Constitution.

History during the Second World War.—
Ger. planes bombed Dutch this before dawn on May 10, 1940 and then land forces crossed the frontier. This attack had been expected, but its exact direction and timing were partly a surprise. The and timing were partly a surprise. The Dutch had no experience of modern warfare. It was five generations since the last hostile truops had entered their ter. They were now to receive the rudest awakening, and their situation was awakening, and their situation was aggravated by an immense Fifth Column aggravated by an immense Fith Column (q,v); for there were 100,000 Gers, living in Holland and a great many belonged to the National Socialist movement led by A. A. Mussert, a Dutch engineer in things as much as possible in the hands of the roads of Utrecht, who condistently followed the line of propaganda of Dr. Goebbels (q,v). Later, on May 10 to swell the ranks of the unemployed after

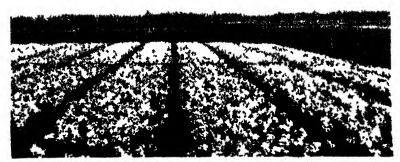
numerous Ger. paratroops were landed, especially on the big aerodrome of Waal-haven. The strategic situation in the vital S. of H. was weakened by the fact that the Dutch and Belgian defence-systems did not really gaupplement each other: and to some extent it may even be said that the Belgian system was based on said that the Belgian system was based on a Ger. occupation of the Netherlands, whereas the Dutch system envisaged the possibility that the Ger. forces would pass possibility that the Ger. forces would passe through the S. of the country and leave the heart of H. slone. On May 11 a Gor. armoured column entered Brabant and violent fighting occurred in the Hague. In the S. of the country Ger. armoured forces now constituted the gravest menace and, on the next day, they reached Dordrecht, thus cutting communications with Belgium and France. In the N. the Dutch succeeded in beating off a heavy attack when the Gers, tried to cross the Zuider Zee. The following day the Queen left on a Brit, destroyer for England and later that day was followed by the Dutch cabinet. The Dutch troops, forced back on the Grebbe Line, retired to the Water Linie but their reserves were fully occupied against paratroops and fifth columnists. On May 14 the Ger. armoured column reached Rotterdam and armoured column reached Rotterdam and heavy fighting took place between the Gers, on the S. and the Dutch on the N. of the riv. The Gers, now decided to destroy the centre of Rotterdam by air bombardment in order to force the Dutch to surrender, and within four hrs. 25,000 dwellings were destroyed and the entire centre of the city became a blazing inferno. In that single afternoon 30,000 persons purished and another 80,000 were homeless. The city was still 80,000 were homeless. The city was still burning a fortnight later, for the water mains were damaged. Without doubt thousands of people suffered lingering deaths under the burning ruins with no hope of rescue. Whole vils., too, were wiped out in a few hirs. In the face of this, one of the worst crimes of human hist., there was no course open to the Dutch commander but to surrender and the Dutch troops laid down their arms, though some continued to fight for some days in Zeeland. Thus ended the brief and tragic Five Days' war in the Netherlands (see further under Western Front I's Sixon Wordle Wasterdam on the 1tth. Ordinary life came to a standstill. Thousands of people committed suicide, most of them Jewish or non-Jewish refugees from Germany. To make a good impression on the Dutch Hitler appointed most of them Jowish or non-Jewish refugees from Germany. To make a good impression on the Dutch Hitler appointed Dr. Seyss inquart to be Ger. Commissioner for the occupied Netherlands. His supposition was that the Dutch would like an Austrian better than a Prussian, but the people had not forgotted Seyss inquart's betrayal of Austria. As in Belgium so in H. the Gors, tried to win the people by propaganda and cajolery. They announced that the New Order would leave things as much as possible in the hands of a 'reconstruction scheme' had proved a about national independence under the failure. The Nazification of H. was to be House of Orange. The programme of the organised so gradually that the Dutch new 'Nederlandsche Unie' seemed at organised so gradually that the Dutch would be hardly aware of the process. A council of Secretaries-General was to be the nominal gov., but the real gov. consisted of the Reichscommissioner and his assistants, while a group of Gor. officers were appointed to supervise Dutch provincial and municipal life. The Gor. order was characterised by its financial corganisation under which iterlin was the centre of a European system of multilateral clearing, which made it easy for the Reich to sap the economic resources of the countries occupied by their troops. Dutch factories which fitted into the Ger. war-machine had orders forced upon them. The Dutch wharves were used for constructing Ger. U-boats. Dutch engineering industry was soon working to full capacity on Ger. army orders. High prices were paid for agric. produce, but in reality the Dutch farmer was paid with reality the Dutch farmer was paid with the financial reserves of the Dutch people, of which his own reserves necessarily formed part. The damage of the Five Days' war was put at £200,000,000 or half the national income; but the Dutch State had to pay the usual costs of occupation, which were calculated at £6 per head of the pop., i.e. £48,000,000 a year or half the State's year, y venediture. Thus H. was crushed under its fluancial burdens and the standard of living rapidly declined. and the standard of living rapidly declined. Produce was carried away into Germany. Supplies, whether ample or scarce, were in the first place destined for consumption by the Ger, troops. The people were re-duced to the role of mere drawers of water and hewers of wood for the Gor. overlords. and newers of wood for the cor. overfords. Everything was done by Seyss Inquart to impregnate Dutch institutions with the 'Nordle culture'. A council of Englishenment was created to supervise the activities of the Press. The Dutch trade union movement was taken over by the Dutch Nazis and a 'Strength-through-loy' movement was organised under the Joy 'movement was organised under the Labour Trade Union. All Dutch artists, who refused to join a Nazi 'guild', were excluded from official commissions. A excluded from official commissions. A special body was set up to examine all school-books and hundreds of thousands of books were destroyed. Public libraries were ruthlessly mutilated in the interests of 'friendly relations between Germans and H.' The fact that the Dutch people proved to be immune against Nazi cultural infiltration was largely due to the Churches, which developed into a stronghold of patriotism. All Jews were dismissed from the Civil Service. But if the Gers, were able to close all schools and missed from the Cavil Service. But it the Gers. were able to close all schools and units, and to fill the papers with propaganda and broadcast Nazi speeches all day, they were not able to turn the Dutch themselves into Nazis. This is the more creditable to the Dutch in view of the ganda and broadcast Nazi speeches all sept. 30 the whole of S. Beveland had day they were not able to turn the Dutch been cleared by Brit. and Canadian forces the mere creditable to the Dutch in view of the careful preparations from 1933 onwards by A. A. Museert to secure the destruction of the independence of H. in the interests of the Nazis who, as early as that year, placed large funds at his disposal for purposes of subversion. Soys Inquart deposes of subversion. Soys Inquart declared that it was forbidden to speak

Notice of Orange. The programmer at new 'Nederlandsche Unie' seemed at first to involve a compromise with the Nazis. Final judgment about the Unie must be reserved, but at least the organisation rendered service as a rallying-point of Dutchmen who refused to be browheaten by Dutch Nazis. Queen Wilhelmina remained more than ever the expended of the will to resistance. There symbol of the will to resistance. There was active resistance too and the Ger. military commander found himself forced to issue warnings against all kinds of на botage.

H. did not again figure in land opera-tions until late in 1914 when the Anglo-huer, chiefs of staff decided to use the newly-constituted Brit. and Amer. Airnewly-constituted BIL and Amer. Aborne live, or Sept. 17, to assist in seizing the Rhine crossings at Nijmegen and Arnhem after the rapid advance by the land armies. It seemed probable that land armies. It seemed probable that through rapidity of exploitation both the Siegfried Line (q.v.) and the Rhine might be crossed and strong bridgehead; established on the Gers. could recover sufficiently to make a definite stand in the Arnhem area. Had this been accomplished it might well have shortened the war by sev. months and the attempt would appear to have been justified for from the time when the allied armies first crossed the Seine in force to the employment of the Airborne Army in H. on Sept. 17, the ground forces made prodigious strides. The first landings of the airborne troops were made on sept. 17 and reinforcements followed on successive days. Eindhoven soon fell to the allies but heavy Ger, resistance slowed down the follow-up of the Brit. Guards Armoured Div. Nijmegen was still held by the Gers, as too was the extremely important concrete and steel bridge crossing the Waal, and even when this bridge had the waal, and even when this proge has been crossed the Brit. forces found that the Gers. had had time to oppose a strong anti-tank screen. There was confused and heavy fighting in the area between Nimegen and Arnhem during the ensuing few days and the position of the First Air-borne Div. became so precarious that on sept. 25 orders were given for the withdrawal of all forces across the Lower Rhine (for full details see Western Front in Second World War.—Built of Arnhem). After this the Allies turned their attention to opening up Antwerp, for though the great port had fallen to them on Sept. 4, the harbour was useless until the Scholdt estuary was cleared of nines and S. Beve-land and Walcheren Is. commanding the sea lane to the barbour had been reduced. The operation to achieve this involved the employment of amphibious forces, but by sept. 30 the whole of S. Beveland had

Navy, which, in the highest traditions of economical way to free the country was to the service, 'attracted to themselves the complete the destruction of the enemy point blank fire of the land batteries, thus | forces elsewhere | In N.E. Holland and permitting the commander and assault troops to gain the shore with much highter casualties than would otherwise have been the case. The three convers ing ground forces, attacking over terrain made extremely difficult by flooding and mane extremely difficult by hooding and suffering heavy casualties advanced with great gallantry against stiff enemy resistance to capture the strong points of Veere and Middelburg and wipe out enemy opposition. By Nov 9 all resistance had ceased and some 10 000 troops and the first the transfer that the transfer the transfer the transfer that the transfer the transfer that the transfer the transfer that the transfer that the transfer transfer the transfer transfer that the transfer transfer that the transfer transfer that the transfer transfer transfer that the transfer transfer transfer that the transfer t

complete the destruction of the enemy forces elsewhere in N.E. Holland and along the coastal belt castward, the Canadians continued their operations to clear the area, taking Oldenburg on May 2. In W Holland, however, no further ground advances were made across the thood barriers behind which the Ger. I wents tifth Army lay entreped. The The W. stuation confronting the Allies in W. Holland was difficult. Civilian conditions Holland was difficult. then had deteriorated steadily for some menths, and after the advance of the Allied armies to the F had isolated the had been captured After this the line area from Germany, the position of the



Vetherlands \a i nil Lourest Office

HORTICULTURE IN HOLLAND NARCISSUS FILIDS AT LISSE

at Nijmegen westward to the sea was held | by the Canadians so that, after the Rhine had been crossed into Germany, a thrust to the Baitle would isolate the Ger forces in H. Early in April the first Canadian Army was probing into H Resistance in North Holland collap ed 'in the first week of April and the et was reached on April 15. By the 21st the whole area apart from a small to in the N.E. was cleared as far as Harderwick and the E. shore of the Ijssel Meer To the W the E. shore of the Ijsel Meer Io the W
the Ijsel R line was stubbornly defended at Deventer and Zutphen but the
former to fell on April 10 in the 5part the (undian First Corps attacked
from Nimegen, and Arabem was taken
on the 15th The Gers, now withdres
into 'Fortes' Holland' bolind the
Grebbe and New Water lines, protected
by floods, beyond which no further Allied
advance was made in this sector. It was

pop. became desperate—It was essential, therefore, that steps should be taken by the allies to relieve the growing distress before wholesale starvation took place The strength of the Ger. defences was such that an operation on a great enough scale to ensure success would have meant a serious we thening of the main allied armies in Germany just when it was all important that they should press home the attacks which were bringing about the final collapse of the enemy there More over, even had the allies been able to launch an offensive against W Holland byte, even had the anies be n able to launch an offensive against W Holland at that moment, the Gers would have opened the dykes to flood the whole country, rulning its fertility for many years to come The Allied commanders year to come the state of the s advance was must in this sector. It was bonour of the Ger army and that the felt by Fold Marshal Montgomery that an advance into H. would occasion great coming collapse of Germany Soyss Installand and that the quickest and most Ger. situation. With the relief of the Dutch thus assured, no useful purpose was to be served by attempting inroads into Fortress Holland at this time and the liberation of the country soon followed on the final collapse of all Ger.

The task of reconstruction was begun immediately after liberation. Of the twenty-five big bridges on the main roads all but six were either wrecked by bombing or blown up by the retreating Gers. and of the twenty-six important railway bridges only three were undamaged. By the spring of 1917 the rebuilding of all the main road budges had been completed other with permanent or temporary structures and nearly all the railway bridges had been replaced. The main communications having been re established the most important harbour installations repaired, constructional energies were tions repaired, constructional energies were next directed to the dual task of house building and rehabilitating the flooded ague, areas (more than 8 per cent of the agric, land was flooded and more than 2 per cent laid waste by Ger. fortified zones, mincholds and aerodromes), much of the latter task being achieved by the end of 1947. The serious housing situation in which the country found itself after the war is indicated by the fact that nearly one-fourth of the total number of nearly one-fourth of the total number of dwollings were aged and nearly 3.73 per cent totally destroyed. The clers, however, permitted civil building during the first two years of occupation and some the damaged in 1940, such as Rhenen and Middelburg, were partly re built and a start imade on reconstruction elsewhere; but in 1912, when the Gersconcentrated labour and materials on building their 'Atlantic Wall,' all civil building was stopped. By 1919 there were still four years of housing arrears to be made up or about 250,000 houses, a task readered the more difficult by the task rendered the more difficult by the fact that the normal rate of increase of pop. has risen from 100,000 per annum before the war to 170,000, and also that temporary houses of prefabricated construction have not been utilised in H. brick being preferred even for small houses as that commodity is the one mdigenous material produced in sufficient digenous material produced in sunicient quantity. Rents are restricted to the 1940 level, although building costs have risen by 300 per cent. The gap between costs and rendal values has now been bridged by a gov, subsidy. The city of Amsterdam was the first in Europe to adopt a regional development plan and other Dutch cities have followed its present a ground of the present accounted by fresh legis. war example encouraged by fresh legis-lation which gave to a board of commissioners for reconstruction control over the disposal and utilisation of land. Nitmegen has taken emergency measures to rebuild its devastated commercial centre lest it forfeit its position to Arnhem, its! rival. Arnhem, where destruction was more wide-pread, is concerned parti-onlarly with traffic access and has a reconstruction plan which provides a ring road round the old centre of the tn., links it tious, the conferences between Indonesian with a residential suburb S. of the Ithine, representatives and the Dutch cabinet in and gives new industrial facilities. Un-1 H. having proved abortive. The Bill,

like these battlefield tus., Amsterdam did not suffer large-scale damage and has pursucci unchanged its progressive pre-war tn.-planning policy. Open planning of flats in parallel blocks now take the place of the closed court-yard type of plan that prevalled from the beginning of this centurv almost up to the war. Work has started on a new residential neighbour-hood W. of the city, which promises to be a model of its kind and will include a large lake, the Slotermeer, to be formed as the earth required to build up the surrounding Work has ground above polder level is excavated.

Anoterdam has, in addition, a planning project for the congested Jowlsh quarter of the city where the old houses were demolished by the Dutch to provide fuel for the rigorous last winter of the occupation. Here tree-lined boulevards are being laid out for the narrowest streets facing the canals. War damage in The lingue was largely confined to two areas, one near the centre and the other to the N, by the suburb of Scheveningen. The solve the student of safeveningsh. The rebuilding plan provides a large new square surrounded by gov. offices, which latter are now inconveniently crowded, and a new graded road system within the city. Of all Dutch cities Rotterdam has the most ambitious plans for reconstruction for the contraction of the contractio

the most ambitious plans for reconstruc-tion (we under ROPTERDAM)
On Jan. 25 1945 the first special tribunal for the investigation of collabora-tion charges was opened at 'altertogen-bosch. It was estimated that about 2 per-cent of the pop. had collaborated with the Gost. Over 90,000 persons were detained in the course of 1945. On Dec. 12 the leader of the Dutch Nais, Mussert, was sentenced to death by a special court at The Hague. On May 3 Queen Wilhel-muna returned to H. and invited Prof. Schermerhorn, a leader of the newly-formed Notherlands People's Movement, to form a new gov. In combination with W. Drees, a Socialist member of the second chamber. Following the elections for the chamber. Following the elections for the chamber. Following the elections for the Lower House (May 17) in which the Catholic People's party and the Party of Labour obtained respectively thirty-two and twenty-nine of the 100 acts, the Schermerhorn gov. resigned. Elections for the Provincial States (which in their turn elect the members of the Senate or upper chamber of the States-General) also saw an increase in the representation or the Catholic people's party and Dr. L. J. N. Beel became Prime Minister. The first joint session of the two newly elected chambers was opened by the Queen on July 23

The dominating question was the Indonesum problem, and, in view of the importance to the metropolitan country of its Indonesian Empire, it is not surprising that the question continued to agitate public opinion both in H. and in the Dutch hast Indies and to dominate park discussions for sov. years. In July 1946 a Bill was introduced for the appointment of a Commission-General to be sent to Java in order to facilitate further negotia-

delegated wide governmental authority to the Commission-General, was passed by the States-General in the autumn. The Commission (with Prof. Schermerhorn as Chairman) left H. in time to resume the intermitted negotiations in Java at the end of Sept. and returned after the initialling on Nov. 15 of the Cherlbon draft agreement (see Indonesia). At once the agreement became the subject of fierce controversy throughout H, Labour and other Left wing parties anp-porting the proposals while the Calvinist Anti-Revolutionary and other Right wing parties were in determined opposition. The Cabinet eventually announced its intention of adopting the agreement as the founda-tion of more detailed plans to be worked out by further negotiation. In the parl debate the final vote (Dec. 20) resulted in sixty-five votes against thirty in favour of the proposals, and the Commission-General, thus strengthened by public opinion in H., then left again for Batavia. The difficulties implicit in the problem of reaching a settlement of this question was the main preoccupation in H. throughout 1947. One major difficulty was that the Indonesians had up till now refused to accept the Dutch interpretation of the Linggadjati agreement, but this agreement was signed on March 25, giving de factorecognition to the Indonesian Republic in Java, Sumatra and Madura and envisaging the formation of a governin nation—the United States of Indonesia—by Jan. 1. 1949. Discussions that followed with the Indonesian leaders on economic matters revealed differences which could not be adjusted and the gov. then gave the leaders fourteen days in which to make up their minds to take action for the foundatheir minds to take action for the founda-tion of the United States of Indonesia within the Dutch Empire; but it was ob-vious that they had next to no control over, or perhaps no real wish to control, the extremist elements in Java and frequent violations of the agreement con-tinued to occur. In July (1947) the Prime Minister (Dr. Beel) in a message to the Indonesians, emphasised that it was imperative that they should cease hostilities if the agreement were ever to become a reality. At the same time a message was sent to the Secretary-General of the United Nations explaining that the action being taken by the Dutch Gov. in Java consisted of police measures only and indicated no change in the decision to carry out the agreement; but later, when the Security Council had the case before them, the Dutch Gov. decided to call off all military action, and when the Council offered to mediate the gov. accepted the offer while always rivising to admit that the Council was competent to adjudicate in the case. But at the end of 1948, fighting again commenced between the Dutch troops and the Indonesians. See further under INDONESIA; Java

A Conference of Belgian, Netherlands and Luxemburg ministers was held at The Hague, April 17-18, 1946 to discuss economic questions affecting those countries, and on April 18 it was announced

that they had decided to complete at once the common customs tariff contemplated by the Customs Convention concluded in London on Sept. 15, 1944, to bring the Customs Union into being before the end of 1946 and to prepare the technical arrangements for the final abolition before the end of 1947 of the

abolition before the end of 1917 of the collection of customs duties at the common frontier of II., and the Belgo-Luxemburg Union (see Benelux).

As the outcome of negotiations in London and The Hague (Dec. 1947-Feb. 1948) an Anglo-Dutch trade and financial agreement was signed on Feb. 27. This was followed in July 1948 by a cultural agreement, covering a wide field of intollectual, artistic and scientific exchanges.

On the occasion of the national celebrations in honour of the fiftieth year of her reign and of her sixty-eighth birthday.

her reign and of her sixty-eighth birthday, which foll on Aug. 31 1948, Queen Wilhelmina on Aug. 30 resumed for a period Wilhelmina on Aug. 30 resumed for a period of one week the royal authority which she had reliquished the provious May in favour of her daughter. Princess Juliana, who had since then acted as Princess Regent. On Sopt. 4 Queen Wilhelmina formally signed an Act of Abdication at the Royal Palace, Amsterdam, in which she declared that she had 'completely voluntarily and irrevocably' abdicated all her royal dignities and prerogatives and transferred them to her daughter, Queen Juliana, the lifth monarch of the Notherlands and of the Royal House of Orange-Nassau, who was formally inaugurated on Nassau, who was formally inaugurated on Sept. 6 in the Nieuwe Kerk in Amsterdam. Queen Wilhelmina after abdication took the title of Princess of the Netherlands, living in complete retirement.

living in complete retiroment.

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Today, 1950

Today, 1950

Holland, city in Ottawa co., Michigan, on the S bank of the Black R., 25 m. 5 W on the Sound of the Black IC., 27 III. S Woof Grand Rapids. It is the seat of Hope College (186), and of the W. Theological Seminary. The tn. was founded by Dutch settlers in 1817, and received its charter in 1807. The pop., in which the Dutch element predominates is 1,000 Hollend open constants.

Houch element predominates is 1,000 Holland, coaise variety of linen, un bleached, and often dyed brown. Its toxture is strong and it washes very well H. was formerly fine linen manufactured in the Netherlands; hence its name. Holland House, historic London residence, between Kensington Road and Cx bridge Road, Kensington, property of the earl of Ilchester, helr of the lox family in the Jacobean style, its centre building. In the Jacobean style, its centre building and turrets were built about 1608-10 by Sii Walter Or as Lt. the time of the third Lord Holland (1800-12) it was a social and political centre of the Whig Party Its circle included Fox, Sidney Smith and Macaulay

Holland Park, dist. of W. London, be tween Kensington and Notting Hill. In II. P. Road is Leighton House, the property of the nation.

Holland, New, seaport in the estuary of the Humber, Lincoinshire, England. There are docks, and a steam ferry to Hull,

which is opposite.

Holland, North, prov. of the Nether-lands, comprising the peninsula between the Zuyder Zee and the N. Sea and the is on the N. side, and bounded on the S by the prov. of S. H and Utrecht Area 11:0 sq. m The inhabs are chiefly en 11:00 sq. m The inhabs are chiefly en gaged in cattle-raising, agriculture and gardening. There is considerable trade in dairy produce, and linen is manufactured in the ths. Much of the land is below sea lovel, and thre are sev. canals, notably the N. Holland ('anal and the N. Sea Canal. The chief the are Haarlem (cap) and Amsterdam. Pop 1,646,000. Holland, Parts of, administrative div. of

Lincoln-hire, which includes most of the fens in the S.E. Area 208,992 ac. Pop. 102,300.

N. Sea. Area 1166 sq. m the concentration of the chief bar. dustry is accretionry and three as considerable shipping trade. The chief this are Rotterdam (cap.), The Hagne, Dordrecht and Levden. Pop. 2.256,400.

Holland-America Line, shipping line, estab. at Rotterdam in 1873, which manness and estable, sor-



THE VOORSTRAATSHAVEN DORDRECHT, SOUTH HOLLAND

Hollander, Bernard (1864-1934) phy-milan, b. in Vienna; came to England, 18.5, and was naturalised as a Brit. sub-act in 1898. Attempted to formulate a co. of London; wrote treatises on the brain, insanity and crime.

brain, invanity and crime.
Hollands, see Giv.
Hollands, see Giv.
Hollar, Wenceslaus or Wenzel (1607–1677), Bohemian etcher, b. at Frague, and din London. He studied at Frankfort.
Strasburg, and Cologne, and in the lastnamed city attracted the noulce of the earl
of Arundel, who brought him to England
(1637). During the Civil war he took
refuge for eight years in Antwerp but
afterwards returned to London. He
worked with unceasing industry for his worked with unceasing industry for his publishers, who took advantage of his Holland, South, prov. of the Nether poverty and his ignorance of the country lands, bounded on the N. by N. Holland, to underpay him. He illustrated Ogilvy's on the E. by Utrecht and N. Brabant, on Humer and Fergil, made etchings of the the S. by Zealand, and on the W. by the works of Holbein, Titian, and Van Dyck, N. Sea. Area 1166 eq. m. The cluef in and executed some beautiful 'Views of dueter's agreement. London. See study by Parthey (1853-1858), with catalogue of his plates.
Hollerith, mechanical calculating method, see under ELECTRIC ACCOUNTING

MACHINE.
Holles, Denxil, Lord (1599-1680), Eng. tains a regular passenger and freight ser-voe between Holland, Great Britain, and good and true men, and, at a time which

was politically a period of Siurm und It is a hardy perennial, herbaccous in Drang, for his public spirit and his single habit, and is frequently cultivated in and highminded aims. An aristograt by Britain especially in the gardens of and highminded aims. An aristocrat by birth, he was always a staunch Whig in principle, and accordingly averse from Cromwell and his rough-riding over timeballowed institutions. As member of Parliament he supported the impeachment of Buckingham (1827), forcibly held the speaker in his chair till Sir John Ellot's protestations were passed (1629), assisted in the impeachment of Land (1641), endeavoured to impeach Cromwell as an incendiary (1644), and tried to compass the dissolution of the parl, troops (1647). Thus, as a Presbyterian and a moderate, he bravely spoke for freedom; in 1639 he suffered a year's imprisonment. and in 1649 only escaped formal expulsion by Col. Pride by fleeing to France. After the Restoration he served King Charles. Holles, Thomas Pelham, see NEW CASTLE,

DUKE OF. Holleschau, tn. 40 m. E.N.E. of Brno, Moravia, Czechoslovakia. The chief in-dustry is in cloth and linen. Pop. 6000. Hollingshead, Raphael, see Hollington, N. Holloway, dist., par. of Ulington, N. London, England. The old Copenhagen

Fields have been occupied by the cattle risids have been occupied by the cattle mrkt. since 1855. At the N. end of Camden Road is the City Prison (for women), a castellated edifice of 1850. Pop. (Upper H.) 36,000, (Lower H.) 10,000.

Holloway College, The Royal, situated at Mt. Lee, Egham, Surrey, England. It was founded in 1883 by Thomas Holloway (2.v.), the proprietor of the noted pills and oldment. Its object is to summly a

and olutment. Its object is to supply a suitable education for women of the middle class. The students are prepared for univ. degrees and must read for honours. The building, which is con-structed in the style of the Fr. Remaissance. was opened by Queen Victoria in 1856, and contains a fine collection of paintings by Constable, Landseer, Millas, Frith, and other famous artists.

Holloway, Thomas (1500 33), Eng. ointment-and-pill vendor; b. at Plymouth Dock (Devonport); son of a baker, afterwards landlord of the Turk's Head Penzance. After his father's death, he kept a grocery: removed to London about 1828. In 1637, he began to advertise an ointment, and made over half a million sterling by unprecedentedly lavish advertising. Founded Holloway College,

Egham. Holly. or Hex aquifolium, species of Aquifoliacee, found very commonly lu Britain. It is cultivated both as an ornamental overgreen tree and as a hedgeplant on account of its dense and prickly foliage. The timber is fine-grained, heavy and compact, and is valued by both the turner and the mathematical instrument maker; the flowers are small and white: the beries are scarlet and glossy, giving the plant a brilliant appearance in late autumn. They are very poisonous, pro-ducing purgative and violent emetic effects.

Hollyhock, popular name for the species of Malvacese, known botanicully as allcountry cottages.

Hollywood, dist. in the city of Los Angeles, California, U.S.A., situated amidst beautiful surroundings and with amidst beautiful surroundings and an ideal climate, famous as the head-quarters of the Amer. film industry, its emer oungings being the film studies. He has injured the Amer, stage by depriving it of its mrkt. outside New York and attracting to itself much of the best writing, acting, directing, and organising talent; while the Amer. vaudeville has also suffered by its fallure to cope with the competition of the screen. Over two-thords (2) billion delibers of the charge in thirds (2 billion dollars) of the cinema investment of the world is in the U.S.A. and nearly two-thirds of the world's films are made in H., while it requires a rigorous system of quotas, prohibitions, subsidies and publicity campuigns to keep other countries from being even more dependent on the H. film industry than they are. Nearby is Culver City, also a suburb of Los Angeles and a centre of the Amer.

Holman, James (1786–1857), 'The Blind Traveller,' native of Exeter. Being compelled through total loss of sight to quit the navy, he travelled alone through the greater portion of Europe (1819-24) and round the world (1827-32). He pub.

micresting jours, of his travels,
Holmby House, more correctly Holdenby
House, 61 m. N.W. of Northampton, a Tudor mansion of which Sir Christopher Hatton was the architect. It was bought by James I., and Charles I was imprisoned here for tour months in 1647. In 1652 it was dismantled.

Holmes, Sir Charles John (1969-1936). Eng. landscape painter: b. at Preston; eldest son of Rev. Charles Rivington H., of Stratton, Cornwall. Educated at St. Edmund's Canterbury, Eton, and Bragenose College, Oxford. His works st. Idenumd's Canterbuty. Eton, and Brasenese College, Oxford. His works are in many art-galleries, and in the Ashmolean, Fitzwilliam, Brit, and Victoria-and-Albert Museums: National Gallery of Birl. Art. ('the Burning Kiln'). Kt., 1926; K.C.V.O. 1928. Ed. Burlington Magazine (1903-09); Slade prof. of Fine Art. Axon, 1901-10; director National Gallery, 1916-28. Pub. Constable (1902), Notes on the Science of Pature-Making (1909). The National Gallery (1923-27). Holmes, Nathaniel (1815-1901), Amerinrist and author, b. at Peterboro', N.I.; graduated at Harvard, and was judge of

graduated at Harvard, and was judge of Missoun Suprome Court (1865-68). From 1868-73 he was prof. of Law at Harvard. He wrote extensively on the Shakes-pearian question. In The Authorship of Shakespeare (1875) he credits Bacon with

the dramas.

Oliver Wendell (1809-94)Holmes, Holmes, Oliver Wendell (1809-94), Amer. poet and essayist, & at Cambridge, Massachusetts. He gradusted at Harvard Univ. In 1829, studied medicine for two years in Paris, and took his M.D. degree in Cambridge, Massachusetts (1836). He continued to practice as a doctor till 1849, and from 1847 till 1832 lectured at Harthose roses, a near ally of the marsh-mallow. Varid on anatomy and wrote essays on

homopopathy, etc., which were conspicuous for their vivacity, unfalling freshnoss, and humanity Collaborated with James Russell Lowell in the saue of a new mage. zine, the Atlanta Monthly (1857) To this he contributed The Autocrat of the Break fast Table (1868), a book of sweet and guileless merriment and informed with the spirit of New Figland. There followed The Professor at the Breakfast Table (1860) and The Poet at the Breakfast Table (1872)



OLIVIR WINDLIL HOLMES (1809 94)

In these is displayed the hest of his prom and poetry His novels the best of which are Line Venner (1861) and The Guardian Angel (1867) though they have been de scribed as merely monologues of H him self, illustrate in the most intimate and charming manner the New England life of the day, and likewise the author's gift for picture-que description and the elasticity and torce of his temperament Ris Life of Emerson appeared in 188 From boyhood H enjoyed all the blessings of good fellowship and tortune See J P Morse, Life and Litters of Oliver II endell Holmes, 1896, also studies by W. H. Schrooder, 1909, S. M. Crothers, 1910 and Catherine D. Bowen, Yankie from Olympia, 1918

Holmes, Oliver Wendell (1841-1935), noines, oliver wenden (1841-1935), son of the famous author of the same name, b. at Boston, Mass, U.S.A. Graduated from Harvard I my and, as a youth was serving during the Civil war with the 20th Massachusetts Volunteers, tising to the rank of lieut -col He was retired with the rank of captain, was admitted to the Bar in Massachusetts in 1867, and started the practice of his profession in Boston In 1870-71 he became instructor in constitutional law at Harvard, and was prof of law there in 1882. He was associate justice 1882-99 and chief justice 1893-91 and the justice 1899-1902 of the Supreme Court of his state In 1902 he was made an associate justice

became famous for his dissenting judgments, which were almost invariably sup-ported by his colleague, Justice Brandels. ported by his colleague, Justice Brandeis. In 1931 many of these famous dissenting opinions, constituting a sort of Amer. magna charta or real democracy, were ed. in book form by Prof Felix Frankfurter of the legal faculty of Harvard Univ. His masterpieces in legal literature were the 12th Ld of Kont's Commentaries (1873), and The Common Law (his Lowell Lectures, 1881). See F Frankfurter, Mr. Jushie Holmes and the Constitution, 1927; also Catherine D. Bowen. Yankee From also Catherine D. Bowen, Yankee From

Olympus, 1948.
Holmfirth, tn., 6 m. S. of Huddersfield,
W Riding, Yorksbire, England. There
are cloth and wool mills and stone quarries the Bilberry reservoir here burst in 1852 eight v-one people were drowned and much damage to property was done Pop. and 1)100

Holmum, chemical element of atomic number 67 and atomic weight 163 5, its winhol is Ho It is a member of the group of rare-earth inetals and occurs in group of rare-earth metals and occurs in guidinite, euxemite, polyerase and other minerals. H was discovered in 1878-79 by P T Clove and J L boret, independently of each other.

Holm Oak, Quercus Hex, shrub like tree of the matteral order barrages.

of the natural order Fagaceae (beeches and cake) with holly-like leaves. Found and cases) with nonvivate leavest. Found in Mediterranean countries, yields a useful timber, and its bark is used for taning. In Britain it occurs as an ornamical evergreen bush 20 to 30 ft high. Holm Thrush, see Missel Thrush.

Holocephali, se under 'HIMERA' Holocephali, se under 'HIMERA' Holocephalin of the army of Nebuchadneyar he book of Judith (apocryphal) tells the story of how the Jewish maiden sited her nation by assussinating H betore the walls of Bethulia, i.e Jorusalem. The story is a legendary one, and it is quite vident that R cannot be connected with the historical accounts of Nebuchadnezzar's reign. His identification is exgestions having been made. Many would connect him with Ordernes, who in 158

B: was king of the (appadocians. Holograph, in Scottish law, a H. deed or will is one written wholly in the granter's own hand—Such an instrument is admissible in evidence without proof of attestation, because it is unquestionably the strongest proof and a document least coable of imitation But the presumpthable of inflation. But the presumption of authenticit may of course, he rebutted by proof to the contrary. H. deeds and the granter as effectually as if executed with the statutory solemnities essential to other deeds, but such effects columns only for twenty years. Deeds in which all the material parts are in the granter's handwiting, or in which what is not in his handwiting is by the deed not in his hands thing is by the deed to mally adopted by the granter, have the same effect as H deeds H. wills, even it unattested, are pressured to have been expressed to have been made, but it is otherwise with H. deeds. See J. Erskine, of the U.S. Supreme Court. As such he Principles of the Law of Scotland, 1754.

mouth; these tentacles are modified tube-feet, and contain an extension of the water-vascular system. The ambulacral feet are furnished with a suctorial disc, and the ambulatory papille are pointed at the ends, with elementary or no calcaroous plates. The water-vascular system consists of a circular vessel with two appendages, the polian vesicle and the stone canal, and five radial vessels. Holothuroidea are divided into two orders, Actinopoda, are divided into two orders, actinopoda, in which tentacles are always present but feet and papillæ may be absent, and Paractinopoda, in which tube-feet, ambulacral papillæ, respiratory trees and curvierian organs are absent. The former curvierian organs are absent. The former contains the family Holothurlidæ, with the Brit. genus Holothuria; Synallactidæ, whose species have a flattened body; Elaspedidæ, with a more or less ventral mouth and elongated body; Pelagothurlidæ, pelagic forms with a cylindrical body; Molpadiidæ, burrowers in mud or clay; Cucumarlidæ, with the familiar Brit. genera, Cucumaria, Thyone, Padus, and Phyllophorus. The order Paractinopoda contains the single family Synaptice, whose typical genus Synapta is known on Brit. coasts, S. inherens and S. on Brit. coasts, S. inherens and S. digitata being the commonest species.

Holroyd, Sir Charles (1861-1917), Eng.

painter-etcher; b. at Leeds; eldest son of Wm. H., merchant. Educated: Leeds Grammar School; Yorkshire College of Science: Slade School, London—assistant teacher 1885-89. Fellow, Society of Painter Etchers, 1885. In Italy with with Sent travelling scholarship, 1889-91. Sent seven pictures to Royal Academy, 1885-1895. His etchings are much better than his pictures. He also executed some his pictures. He also executed some portait-techings and excellent drawings of trees. First keeper, National Gallery of Brit. Art, 1897-1906. Director, National Gallery, 1906-16. Knighted 1903. Holroyd, John Baker, see Sheffikld,

EARL OF.

Holst Gustav Theodore (1874-1934), Eng. composer, b. at Cheltenham, of Swedish extraction on his father's side. Like his father, he was an organist, and he early became choirmaster in Gloucesterearly became choirmaster in Gloucestershire, where he laid the foundations of his skill in choral effect. In 1895 he obtained a scholarship at the Royal College of Music, learning under Stanford and Sharpe. Three years later he decided to earn his living as a trombonist, and so acquire experience of the orchestra from the inside. In 1903 he was music master at Edward Alleyne School, at Morley College in 1907, and later worked in a similar capacity at other well-known colleges. He had to wait long for recognition. His chief works are The Phanets (1915-16), orchestral snite; Hymn to Jesus (1917), choral;

Holothurian (Gk. 5λος, whole, and Garden by the Brit. National Opera Comδυροκιδής, like a door), name given to any pany, in 1923; and At the Boar's Head individual of Holothuroidea, a class of (1925), a Shakespeareau opera, in which he cucumbers. It is an elongated, wormlike animal with a ring of about twenty large retractile tentacles surrounding the worth these tentacles are modified this.

Holothurian (Gk. 5λος, whole, and I Garden by the Brit. National Opera Company, in 1923; and At the Boar's Head individual of the same year he was protike animal with a ring of about twenty large retractile tentacles surrounding the Magadial's mystery blue.

Masefield's mystery-play, The Coming of Christ. See monograph by C. B. M. Dyer, 1931 and Imogen Holst, 1938.
Holst, Hermann Eduard von (1841–1904), Ger. historical writer, b. in Fellin, Livonia. He became prof. of hist. at the univ. of Strasburg and later of Freiburg. tiniv. of Strasburg and later of Freiburg. From 1892-99 he was prof. of hist, at Chicago Univ. His books include Constitutional and Political History of the U.S.A. (1873-91), and French lievolution Tested by Mirabeau's Career (1894).

Holstein, see SCHLESWIG-HOLSTEIN. Holstein, six of the United States. Rising with two branches in S.W. Virginia, It flows with a S.W. course into the N.E. of Tennessee, where the forks unite at kingston. At a spot some 4 m. E. of Knoxville is the confluence of this riv. with the Fr. Broad, after which their united streams are called the Tennessee. Length 350 m.

Holsworthy, urban dist. and mrkt. tn. of Devon, England, 46 m. from Exeter. An ann. horse fair is held there in the summer. In the first quarter of last century a canal was made connecting H. with Bude, but the canal has long fallen into disuse. Pop. 1500.

Holt: (1) Mrkt. tn., 9 m. W. by S. of Cromer, in Norfolk, Eugland. Here is Gresham's School founded in 1555, with Gresham's School founded in 1555, with endowments managed by the Fishinongers Company. Pop. 2500. (2) Vil. on the liee, 5 m. E.N.E. of Wrexham in Den-bigh-shire, Wales. Pop. 1200. Holt, Sir John (1642–1710), a lord chief

justice of England, seems to have sown his wild oats at Oriel College, Oxford. Called to the Bar in 1663, he appeared as counsel for the defence in a series of state trials, and William III. rewarded his ability and zeal by making him lord chief justice (1689). If. was noted in court for his courtesy towards prisoners, his alcofness from all party prejudice, and his excep-tional moral courage.

Holthy, Winifred (1898–1935), Eng. novelist; educated at Queen Margaret's school, Scarborough and Somerville Col-lege, Oxford. Director Time and Tole, 1926. Author of the novels Anderby 1926. Author of the novels Anderby Wold (1923), The Cranded Street (1924), The Land of Green Ginger (1927), Poor Caroline (1931), Mandon Mandon (1933), Thith is not Sober (1934), Take What You Want (U.S. title, South Riving) (1936, awarded the James Black Prize), Pavements at Anderby (1937); Pamphlets: Eulychus or The Future of the Pulpit (1928), Criticism (1930), and Virginia Woolf: a critical study (1932), Holtel, Karl Eduard von (1798–1880), Ger. actor and author, was a man of yer-

Ger. actor and author, was a man of ver-satile talent and varied experience. Havtral suite; Hymn to Jesus (1917), choral; ing volunteered in the Prussian army and Ode to Death (1919), choral work produced at the Leeds Festival in 1921; The Persator, and appeared as Mortimer in Jest Fool, an opera, produced at Covent Schiller's Maria Stuart. His popular

vaudeville Die Wiener in Berlin was produced in 1824, and his successful play Lenore in 1829. Meanwhile, he toured with theatrical companies at home and abroad, conducted theatres at Vienna and abroad, conducted theatres at vienna and Riga, and won golden opinions by truly dramatic recitals from Shakespeare and his own poems. These latter roveal his natural gift for lyrical outpouring; his Schlesische Gedichte (1830) had reached their twentieth ed. in 1893. H. left behind him three novels and eight vols. of frecthething autobiography (1843–50). fascinating autobiography (1843-50).

fascinating autobiography (1843-50).

Holtzendorff, Henning von (1853-1919),
Ger. admiral; b. in Berlin; son of Otto
von H., vice-president of the Court of
Appeal. His early neval life was speni
chiefly in Far E.: he attained flag-rank in
1905; vice-admiral, 1907; admiral, 1910—
in command of Grand Fleet. Retired
from sea-dutles, 1913; in Sept. 1915,
chief of Naval Staff. Gave orders for
'unlimited' U-boat warfare, Dec. 22,
1916. Relieved of office on account of
ill health, July, 1918.

ill health, July, 1918.
Holtzendorff, Josehim Wilhelm Franz Holtzendorff, Joachim Wilhelm Franz Philipp von (1829-89), Ger. criminologist, attended the univs. of Bonn and Heidelberg, and finally graduated in law at Berlin (1852). Privat docent in 1857, he was three years later appointed prof. extraordinary, but his advanced and en-lightened political opinions long hindered inglicence pointers opinions long Mindered his preferment. In 1873, however, he became head of the faculty of jurisprind-ence at Munich Univ. and held this chair until his death. An authority on criminal law, he is esteemed also as the editor of many invaluable legal compendia, to wit, Handbuch des deutschen Strafrechts (1871-1877) and Handbuch des Volkerrechts auf Grundluge europäischer Staatspraxis (1885-1890), and as the author of a series of independent treatises, such as Die Princimen der Politik 1869).

Holtzmann, Heinrich Julius (1832– 1910), Ger theologian, son of the emiuent philologist, Adolf H., prof. of theology at Heideliner from 1861 to 1874, he after-wards accepted the same chair at the univ. of Strasburg. His reputation as a critic of Straeburg. His reputation as a critic and scholar rests on his exegetical works anent the N.T., and especially on the Johannine books (1890), the synoptic gospels (1889), and the Acts of the Apostles (1901). He upheld the theory that both Matthew and Luke based their narratives on that of Mark. At first somewhat conservative of older theories, he let a bound a leading repursantative. he later became a leading representative of the advanced and modern school. other of his critical pubs. was the Lehrbuch

der neutestammilichen Theologie (1897).
Holub, Emil (1847 1902), African traveller, b. at Holitz, Bohemia. He took his M.D. degree at Irrague Univ., and went out to S. Africa in 1872. He travelled over various parts of the country, collect-

Alexander I. of Russia and the sovereigns of Austria and Prussia and the sovereigns of Austria and Prussia made a solemn covenant that in all matters both of domestic and foreign policy, they would be guided by the principles of Christian ethics. The main issue of the alliance, one of whose first aims was the preservation of recognition that the preservation of peace, was, ironically enough, the suppression of the popular movement for freedom and equality, which was at that time a growing menace to royal prerogative and despotism in every W. nation. The league, which was discountenanced in this country or privilege. in this country as an insidious check on true liberty, soon died a natural death.
At the time of its formation, Alexander
was under the sway of Madame de
Krudener, the mystic.
Holy Coat of Treves, famous reits of the

eleventh-century cathedral of SS. Peter and Helena in Trèves, Rhenish Prussia. and Helena in Trèves, Rhenish Prussia. Logend says that it was brought by the Empress Helena from Palestine, but the first reference to it is on a tablet dating from the sixth century. It is reputed to be the 'seamless coat' of Christ, but is now little more than 'connected fragmentary particles' of cloth. In 1512 the pope sanctioned its exhibition once in seven years, and ever since it has been a source of income to the church. This source of income to the church. This relic, like others, is believed to work muracles, and in 1891, when it was on view for the first time since 1844, was the object of pilgrimage for almost two million people.

Holycross, par. and vii., co. Tipperary, Ireland, 20 m. N.W. of Tipperary; much visited for its magnificent ruins of a Cisterciau abbey. The dist, is very fertile and there are good pastures. Pop. 1000. Holy Cross Mountain, peak, 14,000 ft. in height, of the Saguache range and branch of the Rockies, Colorado, U.S.A., in Eagle co., 15 m. N.W. of Leadville. Its name is taken from two luge spowsfilled.

name is taken from two huge snow-filled ravines which have the appearance of a CTOS9

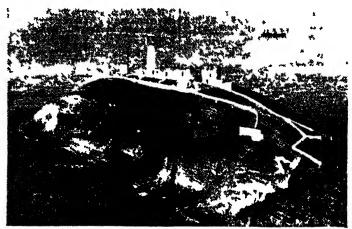
Holy Ghost, see HOLY SPIRIT.
Holy Grail, The, see GRAIL, HOLY.
Holyhead, seaport and mrkt. tn. on
Holy Is., Anglesey, N. Wales. It is the
most important mail-packet station for
Ireland and is the starting point of the
L.M.S. steemers for Dublin and Greenore,
It has extensive railway and steem-host L.M.S. steamers for Dublin and Greenore. It has extensive railway and steam-boat traffic. It possesses a fine harbour, with an area of 267 acs., begun in 1846 and finished in 1873, and a breakwater 1 in long. This refuge is extended by 400 ac. of roadstead. There are a wireless station and a fine old embattled church (St. Cybi).

Pop. 10,700. (See Illustration p. 202.)
Holy Island (1) (anet Lindisfarne), is, of
the caset of Northumberland, England,
connected with the mainland at low tide. his M.D. degree at Prague Univ., and went out to S. Africa in 1872. He travelled out to S. Africa in 1872. He travelled to save various parts of the country, collecting valuable natural list, specimens. His books are: Die Kolomisation Afrikas (dilices, St. Adam founded here a (1881-82), Sieben Jahre in Sidafrica, 1872-79 (1881. Eng. trans. 1881), and Von der Kapstadt ins Land der Maschulumbe (1888-90).

Holy Alliance, league ratified at Paris in 1816 after the downfall of Napoleon.

is, was sev times ravaged by the Danes, and this, added to the increasing import ance of the sec of Durham caused it to be ultimately abandoned. To the S.W. is a small fishing vil with harbour Area 1050 acs. Pop. 586. (2) Rocky is off the 1050 acs Pop 586 (2) Rocky is off the L coast of Arran rising stoeply in the firth of Clyde Scotland, it has a light house (3) Or Holyhead Is rocky and barren is 8 m long by 3 m broad, W of Anglesey N Wales separated from it by a sandy causeway Tro Arddur on Penrhos Bay is a seaside resort

'the most holy place,' contained the Ark of the Covenant and the 'mercy seat, and was separated by a veil from the outer chamber, 'the holy place It was, in deed, Jahveh's throne he appeared there attended by adoring Cherublin, and there the High Priest on the Day of Att nement presented the blood by which the Sins of the nation were covered up'or wiped away.' In reading in Frontus the minute and elaborate descriptions of puestly parrative when describing this puetty narrative when describing this wildeness tent sanctony and all that appearance to the mathematical symmetry of its arrangements and de Holy Land, see Palestine Holyoake, George Jacob (1917-1906), symmetry of its arrangements and de agniator the son of a Birmingham



SOUTH STACK LIGHTHOUSE HOLDHIAD

Fru I I sile sy

engineer was very early it life inspired with notions of reform and it the age of fitteen becime a (hartist lie wis a work man until 1810 when he been ente wher of the Owemte movement at Weicester Later he went about the country lecturing and having decided that the evidences of Christianity were insufficient he made remarks in rublic for with he was charged with blasphemy and imprisoned Subsequently his energies were mainly icvoted to social ictorm and the perustent advoracy of coordiation He wrote a History of Cooperation in England (187)) and bloggipher of Tom Paine, Richard Carlisle, Lobert Owen and John Sturrt Mill, as well as many pamphlets on controvers at subjects His autobiography is entitled Stely Years of an Agilator's Tife (1892) See C W Goss, A Descriptive bublivgraphy of the Writings of G J Holyoake 1908 and J McCabe The Life and Letters of Holyouke, 1908

possible not to recognise how greatly the picture has been influenced by certain dominant religious ideas. The unap-pron hat k majesty of Jahveh 4 hollings and teamty of his attributes are reflected in the arrangements of his eartly sanc By seconding states of sunctitythrough court holy place and holy of holis core ponding to lymen priests, and High In section current shape of holinoss is reached. All this has naturally lent itself to in claborate development of teligious synt lish from early to modern tings and ha also exercised a profound influence on the religious symbolism of certain parts of the N F These considerations help to explain the relation of siderations help to explain the telation of the trickly description of the sanctuary to historical fact for the priestly writers and not make it their aim to present hist as it was but to avistoriatise traditions and often to supplement them under the dominance of religious kleas' (Monelle) Priestly narrative, is fact, presents an ideal labernacle, in which the developed institutions of a later age are residented in a Monate environment with Holy of Holes, inner chamber of the sents an ulcal labernacie, in which the Jewish tabernacie (Ex xxvi), and of developed institutions of a later age are Sciemon's Temple (I. Kings vi) It was reflected in a Mosaic environment with

ceived and unjust.

Holyoke, city on the r. b. of the Connecticut R., 8 m. N. of Springfield in Hampden co., Massachusetts, U.S.A. An insignificant vil. till 1849, it rapidly became a thriving industrial centre when a huge dam was constructed so as to utilize the reverse of Hodor Keille on the Country of Hodor Keille on the Coun the power of Hadley Falls on the Con-necticut R.; a second and larger dam was built in 1900. The first tn. in America to manuf. paper, H. is noted also for its cotton goods and slik mills. Many other manufs, are carried on on a large scale, the

prin. being blanket, felt and braid fac-tories, boilers, trucks, tyres and tobacco. Pop. 57,000.

Holy Orders, see ORDINATION. Holy Places, localities in and close to Jernsalem as-ociated with the life of Christ. They include the church of the Holy Sepulchre (see SEPULCHEE, CHUICH OF THE HOLY); Bethlehem, whose outstanding monument is the Basilica of the Nativity, shared by sev. communities. Orthodox, Lat. Armenian, Jacobite, Abyssinian and Coptie; the Garden of Gothsemane, belonging, in shares, to the Franciscans, the Orthodox Patriarchite. of Jerusalem, the Russians, and the Armenians; and other sacred sites on Olivet or the M. or Ouver such as the Ascension. The Pope entrusted the custody of the H. P. in 1230 to the custody of the H. P. in 1230 to the Franciscans and later this custody passed to France, the position, however, being complicated by the fact that the Turkish suzorain was in possession of the Holy Land. Difficulties over the custody as between France and Russia, representing respectively W. and E. Christianity was one contributory factor to the outbreak of the Crimean war. Under Art. 13 of the Mandate for Palestine granted by the League of Nations to Great Britain all responsibility in connection with the H. P. and religious buildings or sites in Palestine, including that of preserving existing rights and securing free access existing rights and securing ree access and the free exercise of worship, while ensuring public order and decorum, was assumed by the mandatory, who was, under the Mandate, made responsible solely to the League of Nations in all matters connected with the mandatory obligations. The mandatory, however, was empowered to arrange with the beliefing administration to convenient the Palestine administration for carrying the provisions of this Article of the Mandate into effect. The same Article also provided that nothing in the Mandate night be construed as giving the mandatory authority to interfero with the fabric of purely Muslim sacred shrines. Under Article 14 of the Mandato the mandatory was enjoined to appoint a Commission to define and determine the rights and claims in connection with the H. P. and the rights and claims relating to the

the necessary modifications; and to judge its functions. The duties of the former the authors of such writings by the canons Mandatory have now passed to the of modern historical science is miscon- United Nations (see further under Paliss-

Holy Roman Empire. This name is usually applied to the empire founded by Charles the Great in the year 800, and which was regarded as the revival of the Which was regarded as the revives of the W. Rom, empire. It did not include all the ter. of the latter organisation, but nevertheless it typified the ideal. The W. Rom, empire had come to an end in 476, when Odoscer had finally taken possessions of talk and had signified to Zono. sion of Italy, and had signified to Zeno, the ruler of the E. empire, that henceforth he alone should rule as emperor of a Rom. empire, and he, Odoacer, should rule as patticum and, in all but name, king of italy. Since those days the face of kurupe had changed considerably. Odo-acer had been deposed, executed, and succeeded by Theodoric, the leader of the Ostrogoths; and the death of the latter (52a) had witnessed the break up of the power of the Ostrogoths, and for a time Italy became the scene of constant wars. Justinian and his great general, Belisarius. had conquered much of Italy, but had hually been held in check, and then the N. part of the peninsula passed into the hands of the Longoburd (Lombards). In another part of W. Europe the power of the Franks had been constantly on the mrase. The line of Clovis had passed away with the last of the rois faincants, the Mayors of the Palace had usurped the hands powers and tundly in 739 the kingly powers, and finally, in 732, the createst of the Mayors of the Palace, thatles Martel, had held in check the inroad of the Saracens, and had, according to one great authority, saved W. Europe for Christianity. The victory at Potiers, according to Gibbon, prevented the Moslem from e-tablishing his faith to the uttermost isles of the W. Charles Martel also helped the papacy in the struggle against the Lombards, and commenced the long alliance of Carolings and papacy. In the meantime the growth of the power of the bishops of Rome had been equally great. By the beginning of the eighth century the papacy had declared itself the spiritual head of the world, and had pre-pared the way for that union of the peritual and temporal power which was to rule the world, acknowledged by all.

The accession of Charles the Great in

The accession of Charles the Great in 768 marks the beginning of the closer unity of papacy and empire. Twice Charles the Great crossed the Alps to rescue the papacy from the clutches of the Lombards. Finally, during his second expedition, he wristed for himself the iron crown of Lombards. wrested for himself the iron crown of Lomburdy. Henceforth the papacy was to be protected by its most helpful ally. The gratitude of the pope was speedily seen: as Charles knelt in prayer in the great church of St. Peter's on Christmas Day in the year 800, he was saluted and crowned by the pope as emperor. Henceforth the Middle Ages were to be practically one long quarrel between the nominal heads of Christmou. Had Charles forcease the different religious communities in Pales-Christendoru. Had Charles forcesen the tine. The council of the League was to give its approval to both the composition the claims which later successors to of the Commission and the performance of the chair of St. Peter founded on it, he probably would have, as in later days Napoleon did, crowned hinself. The arrogant pretensions of the later papacy were based on the fact that the pope had raised a mere king to the empire

It must be borne in mind particularly that, as H. W. C. Davis points out in his Medicival Europe, the Carolingian empire was based upon the model not of Augustus but of Constantine, from whose forged donation the papacy claimed for itself all the provs. of the W. empire The empire did not, save as an ideal, outlive its founder. The reign of his son witnessed the beginning of the end, and the treaty of Verdun (843) estab. a potential France, Germany, and Italy. Only once again, under Charles the Fat (8*1-887), were the three portions of the empire of Charles the Great united. The later Carolings were as weak as the mis functions, and the invasions of the Norsewas based upon the model not of Augustus funcants, and the invasions of the Norsemen gave greater power to the local nobility, and this was aided by the rise of feudalism. In German, the power concentrated in five great duchies, Saxony, Swabia, Franconia, Bavaria, and Lotharingia. In 918 the dukes refused to recognise the Caroling line, and elected Henry the Fowler of Saxony as king The Carolings continued in France until 987, when they were supersided by the Capotian line. The year 918, although it does not seem to have affected contemporary historians to any great extent, marks the final separation of France from the empire. Henry the Fowler concentrated his attenthe way for his son Otto. The value of his work is seen best in the reign of his son Otto. The value of his work is seen best in the reign of his son Otto the Great (936-973). In Germany he put down two civil wars in the duchies, ne put down two civil wars in the duchies, first giving them into the hands of his relatives, then seeking active alliance with the church to produce unity. His greatest success was the victory over the Huns on the Lechfield (954) and his policy of 'Marks' (Marches) along the E borders. The alliance with the papacy led to the request to interfere in it. politics, which he did in 951 and 962. The second intervention led to his coronation as enintervention led to his coronation as emperor of the W

Otto regarded himself as the successor of Charles the Great, and appointed and deposed popes from 903 till his death. Otto II. (973-983) began to split the great duchies, but still extended towards the E. The ideals of Otto III. (983-1002) were more universal, and he wished to make Rome and not Aachen his centre. On the death of Henry II. (1002-2), the last of the Saxon house, the empire passed to the Salian house, the first emperor of which was Conrad. (102-1037), who concentrated upon ensuring the hereditary succession of his house. To this end he made feudal benefices hereditary in Germany and Italy. The reign of his son, Henry III. (1037-50), is usually regarded as the most glorious period of the mediaval empire. Hungary, Poland, and Bohemia became flefs of the empire. There was comparative peace, and the development of almost a national

feeling in Germany.

During this period the papacy had been gradually developing its resources. In 918 there had been estab, the monastery of Cluny, whose members were now aiming at the purification of the church and its release from lay interference, and the exaltation of the papacy. Henry III. showed deep interest in their work, but in his actual relations with the papacy appointed and deposed popes. Henry IV. (1056–1106), in his actuagle with the papacy, was faced with the 'noblest figure' in hist., Gregory VII. (Hildebrand). The papacy was exceptionally powerful, having for its support the Cluniacs, the Normans of S. Italy, Matiida, countess of Tuscany, and all discontented nobles in Germany. In 1075 Hildebrand at a synod formulated the claims of the papacy by stating that no lay prince must inter fere with the election and investiture of clerica. Henry defied the pope, and the pope excommunicated the emperor, who at once found himself in great difficulties, be ause his nobles refused to recognise an excommunicated king. He was forced to cross the Alps, and in 1077 to undergo the diamatic humiliation at Canossa But Hildebrand's severity defeated his wen ends by allenating the Ger. princes, and in 109, he was driven from Rome, and found a refuge in Apulla with the Normans. In the same year he died Renry IV. was deposed by his son (1106), and also died in the same year. Henry V (1106–25) concluded his phase of the struggle by the Concordat of Worms (1122). By this concordat the spiritualities were to be conferred by the papacy, whilst for the temporalities of the bishopric homage was to be done to the reigning prince (compare Anselm and Henry I., 1106).

After Lothair another dynastic change took place with the election of the Hohen staufon candidate, Frederick I. (1152-90), who combined the claims of Salia and Saxon He again was drawn into a long struggle with the papacy, whose ally now was a new organisation, the Lombard League, formed by the tins of N. Italy. He was, however, defeated at Legnano (1176), and again an emperor made submission to a popo in 1177. But Frederick had succeeded in establishing a conditional supremacy over the important tins. of N Italy. By the marriage of his son to Omitance, he frees of the Norman dominions, it seemed that the dream of an empire from Sicily to the Baltic would be realised.

Sicily to the Baltic would be realised.

Henry VI. (1190 9%) had greater promise than any previous emperor. The brevity of his reign, however, prevented any great developments, and his death left the throne to a child. The power of the papacy is well illustrated by the events of the next few years. Imporent III. took Constance and her son under the protection of the papacy, giving them the two Sicilies. The empire was granted to Otto IV. on condition of alliance with the papacy. Otto proved recalcitrant, and in 1214 the papacy offered the empire to the young Frederick. John of England allied himself with Otto, his nephew. Frederickfoundsupport in Philip Augustus,

and defeated the allied forces of John and Otto at Bouvines, a battle which influenced England, in that it led to the granting of Magna Charta; France, in that it removed fear of Eng. interference and helped the Capetian monarchy. In the last phase of the great medieval struggle, the cause of papal enmity seems to have lain chiefly in fear of the position of the emperor, Frederick II. who now held both Sicily and N. Italy. But with the death of Frederick the papacy gathered itself together for a final attack on the Hohenstauten. His direct sucon the Hohenstaufen. His direct suc-cessor was 'the little Conradin,' but he did cessor was the little Conradin, but he did not gain election in Germany. Various candidates appeared, among whom were Alfonso of Castile, Richard of Cornwall, and Wm. of Holland. But none were actually recognised as emperor. There-fore the period from 1250-73 is known as the Great Interregnum, so that the death of Frederick II. marks the end of the great period of the medieval empire. In 1273 Rudolf of Hapsburg was elected emperor, but he never ruled over Italy. Henceforth the H. R. E. does not include Italy, and may to a very great extent be regarded as the personal and private possession of the house of Hap-burg.

Most of the later emperors were chosen from the house of Hapsburg, whose chief possessions were in Austria, acquiring Bohemia by mar...sc. in 1361 the granting of the Golden Bull by Charles IV., which settled the method of choosing the emperor, restricting the number of electors to seven, and naming them, lessened the power of the emperor in favour of the princes. During the four-teenth and differenth centuries, the elected emperor often paid more attention to his hereditary domains than to his imperial olaims, because the empire was becoming so weak and poor. Therefore the emperor was chosen from the most powerful House, was enosen from the most powerful 1104se, Austria, so that his private possessions would lend dignity to his position. During the sixteenth century, Maximilian added Burgundy to the possessions of Austria; his son, Charles V., held Spain, the Notherlands, Burgundy, Milan, the two Scidles, Austria, Hungary, the Sp. dominions in S. Austria, Hungary, the Sp. dominions in S. Austria, Hungary, the Sp. dominions in S. America, and the empire. But the empire itself was purely Gcr., and had little to do with affairs outside. The Reformation and the Counter Reformation, however, affected it greatly. There is no clear line of demarcation, and by the sottlement of the peace of Augsburg, 1555, the two religions were placed on an equality, each state setting up its own religion (carus regis, etus religio). Out of this unstable regis, etus religio). Out of this unstable situation there developed the Thirty Years war, fought with the empire as a battle-ground. In 1648 the peace of West-phalia was concluded, Protestantism and Catholicism were put on a level again, but the empire was ruined by the war. From this time Germany was a mere lax confederation of petty despotisms and oligarchies; Switzerland received its independence, as did also the Netherlands, Sweden and France received ters, within the empire. There could be no national feeling in such circumstances; the power

of the emperor had departed, and interest must centre in the rising power of Prussia and its rivalry with Austria, shown especially in the wars from 1740 to 1763, in which Frederick opposed Maria Theresa.
But as a result of the world schemes of Napoleon Bonaparte the empire found to the world schemes.

self in grave difficulties. First the Austrian Netherlands and all Germany W. of the Rhine were added to France. When Bonaparte in 1804 crowned himself emperor of the Fr., Francis II., who was em-peror elect of the Roms. and king of Germany, changed his title to Hereditary Emperor of Austria. In 1805, at the treaty of Pressburg, he again changed it to emperor of Germany and Austria. Many of the Ger princes now seceded from the em-pire, and formed themselves into a Conpire, and formed themselves into a Confederation of the Rhine under the protection of Napoleon Bonaparte. In the same year, 1806, Francis resigned the empire; since then, there has been no other emperor of the H. R. E. See J. Bryce, The Holy Roman Empire, 1904; T. F. Tout, The Empire and the Papacy, 1906; J. Halles, The Epochs of German History, 1925; L. Zlegler, Heilige Rich des Deutschlands, 2 vols, 1925; Cambridge Mediccal History (1050-1485), vols 5-8, 1926-36; J. W. Thompson, Feudal Germany, 919-1199, 1928; H. Pinnow, A History of Germany (Everyman's Library), 1939; A. J. P. Taylor, The Course of German History, 1945.
Holyrood, name of the royal palace of

Holyrood, name of the royal palace of the scottish kings. David I. founded an abboy in Edinburgh (1128), and dedicated it to the Holy Rood or (ross with reference to the shape of a beautifully-wrought casket which Margaret, wife of Malcolm, the king, brought to Scotland in 1070. The monastery, which was built in the Norman and early Gothic styles, was dissolved in Henry VIII.'s reign, when the chapel became a par. church, until James II. (of England) made it a chapel royal (1887). Since 1768 it has been left a ruin. Brgun by James IV. in 1501, the malace Regun by James IV. in 1501, the palace was a residence of the Scottish Kings till was a residence of the Scottish Kings this the Union, and is now open to the public, who are shown where Mary slept and litzio was murdered. Bonnie Prince (harlie danced in the picture gallery (1745). Robert Bruce convoked a parliament within the abbey precincts, and De Quincey once took refuge in the debtors'

annetuary.
Holy Sepulchre. Church of the see SEPULCHRE.

Holy Spirit, The, or Holy Ghost, or Paraclete, in orthodox Christian theology, the Third Person in the Blessed Trinity.

the Father and the Son, while His Personality is insisted on in the important passage beginning John xiv. 16, as also in John xv. 26. But when the Comforter is come whom I will send unto you from the Rather come the Strett efforts which was come whom I will send unto volt from the Father, even the Spirit of truth, which pro-cedeth from the Father, He shall testify of me. In this text we have also a refer-ence to the question of the Procession of the H. G., which caused such scrious misthe H. G., which caused such scrious mis-understandings between the E. and W. churches in later centuries. The E. con-demned the churches of the W. for the addition of the Filloque clause in the Nicene Creed, and they further denied that the procession of the H. S. was 'from the Father and the Son.' It must be pointed ont, however, that there is probably no roal doctrinal difference involved, as the W. has never held that this rather unfortu-nate addition to the Ecumenical Creed nate addition to the (Ecumenical Creed teaches a Dual Procession, but rather a procession from the Father through the Son. This doctrine E. theologians would endorse. Many questions relating to the H. S. are bound up with the controversies as to the Holv Trinity which occupied the mind of the church in post-Nicone times. The most important results, embedded in the Athanasian Creed and the additions in the Athanasian Creed and the additions to the Nicene Creed, lay stress on the personality of the II. S. See H. Swete's article in the Dictionary of Christian Biography, 1877, and the same writer's Holy Spirit in the New Testament, 1909, and Holy Spirit in the Ancient Church, 1912, also any systematic works of

1912, also any systematic works on Christian theology.
Holytown, th., Lanarkshire, Scotland, 14 m. N.N.E. of Lanark. Situated in the most productive region of the Lanarkshire mineral deposits, its coal mines and steel works are valuable. Pop. 13,000. Holy Water, water blessed by the bishop

or priest for ceremonial purposes. is naturally used as a symbol of spiritual cleaning, and that the habit of using H. W. was common very early in the Christian church we are told by Tertuillan. In the Rom. Catholic Church there is a solemn blessing of H. W. on Saturday in Holy Week; this water, for the blessing of which special coremonies are used, is called Easter Water, but the blessing of water water, but the blessing of water by a simpler rite may be performed by the priest at any time. Stoups with H. W. stand at the content H. W. stand at the entrance to Rom. Catholic churches, and before High Mass the priest sprinkles the congregation with blessed water. It is also used at funerals, in blessings, etc. Salt i water when it is blessed. Salt is mixed with the

Holy Week, week immediately precedrioly week, week immediately preced-ing Easter in which the events of the last week of our Lord's life on earth are com-nemorated. It is observed by all Catholics with strictness and penitence, all the officer and devotions bearing this note. It begins with Palm Sunday, on which the palms are blessed in commemoration of Christ's entry into Jerusalem. On Yaundy Thursday white is used at the Mass, because on that day Christ instituted the Blessed Sacrament, but immediately afterwards the alters are

brated on Good Friday. During the last three days of Holv Week, the offices of Matins and Lauds (Tenebrar) are sung with impressive coremonial, generally on the

previous evening.

Holywell: (1) Markt. tn., 4 \ m. W.N.W.
of Flint in Flintshire, N. Wales. It is served by the railway, and besides lime quarries has zinc, lead, and copper ores. Close by are the ruins of the Basingwork Cistercian abboy; but H, is named after St. Winifred's Well, long a Morca for pulgrims and invalids in search of a prigring and invalids in search of a miraculous cure. A dothic structure now covers the spring. Pop. 7900. (2) Vil., 41 m. N.W. by N. of N. Shields in the Wansbeck div. of Northumberland, England. Pop. 3400.

Holywell Street, part of old London, since done away with to widen the Strand between St. Mary's and St. Clement's churches. It was named after a holy well near by. In early times the residence of slik morchants, it was latterly street of bedeen of bedeen of slik morchants. notorious for the number of booksellers who made a livelihood by selling coarse

and obscene literature.

Holywood, picturesquely situated sea-port, co. Bown, Ireland, 41 m. N.E. of Belfast. Here took place (1644) the signing of a solemn lengue and covenant for the defence of the kingdom. The church dates from the twelfth century. Pop. 4000.

Holzminden, tn. on the r. b. of the Woser, 29 m. N.W. of Gottingen, at the base of the Sollinger Mts. in Brunswick, Germany. It is an agric, centre, and before the Second World War had iron and steel and weaving industries, also a school for builders founded in 1831. Pop. 12,900.

Homa, see SOMA.

Homage, in foundal times, the formal expression (homo rester devento, I become your man) of allegiance of a vassal to his lord. Noblemen at a coronation and bishops on appointment do H. to the govereign.

Homberg, tn. of the Rhineland, Gor-many, 8 m. W.N.W. of Mulheim. There are collicries and engineering works. Pop.

30 000

Homburg vor der Höhe, or Bad Homburg, tn. and watering-place in Hesse, Germany, situated on a spur S.E. of the Taunus Mts., 8 m. N.N.W. of Frankforton-Main. Before the Second World War it was one of the most fashionable spas in Europe, and was yearly visited for its solino and chalvbeate springs by some 12,000 people. Machines, hats, and white-lead were manufactured. Its pre-war pop. was 16,800. The tn. was almost completely destroyed in the war. Home, Earls of, belong to an historic Scottish border family. Sir Alexander Home (d. 1191) was created a peer by James III., but afterwards joined the public against the king and was present.

nobles against the king and was present on the field of Sauchieburn (1488), where the latter died. His great grandson, Alexander, the third Lord H. (d. 1516), was chamberlain to Jathes IV. he actually escaped with his life from Flodstripped and washed. No Mass is cele- den, and was finally entired to Holyrood

by specious offers from Albany, the regent, and summarily executed for treason Alexander, the sixth Lord H and the first carl (created 1605), carried on endless feuds with the Hepburns whon he was Warden of the Marches His father Warden of the Mrenes are tended Alexander the fifth Lord H (d 1775) had fought against the queen at Carberry Hill and Languide, probably because Bothwell was the head of the Hepburus his firm altern than the purch again. was the need of the ninth earl (d 1756) from whom the present end trace his descent succoded his brother who fought against the Pretender at Lrestonpans

Athelstaneford, but in 1757 he retired from his charge. He made many ac quaintances with literary folk, and was introduced to Lord Bute soon after be resigned his elected duties, and for some ve its served as his private secretary. In 1802 he pub a History of the Rebellion of 174) but it is as a diamatist he is best known His prin plays were Agis (1718), The Sieue of iguileia (1760), Alonzo (1773), and Alfred (1778) His in t dr will, Douglas produced at Covent, Gerden in 1717, with Barry and Peg Wollington in the cast was his greatest



Crown copyright A HOME GUARD VIRCH PAST IN AN ANGLISH VILLAC! 1 ILDING, KENT.

Home Counties, term used to denote the Hertfordshire, Kent Middlesex, and Surroy. They are so named as being the nearest to the Metropolis

Home, Daniel Douglas (1833 %), cot tish spiritualist, was brought up by an aunt in America, where, in 1850 he was already knewn as a spiritualistic medium His life was spent in giving scances in England and on the Continent especialis in Russia, where he had an audit nee with the Czar Browning, who was present at his meetings, records his unit yourable impressions in Studge the Medium, 1861 It was his table turnings and traffic with ghosts which ied to his expulsion from the See Jean Buiton,

Rom Catholic (hurch See Jaan Button, Reyday of a Wisard, 1948 Home, John (1722-1808), dramatist, served as a volunteer in the rising, of '45 dramatist. success, and it is still remembered for the speech beginning six name is Norval, which was long a favourite recitation. then halled as a second Shakespeare, he

ins since taken his place as a very medi-te writer, and his works no longer hold the stage See A I dipson John Home, a study of his I ife and Borks, 1917

Home Guard, or Local Defence Volun-teers, volunteer defence force, recruitment it which began officially in May 1940, in sponge to the Will Minister's call in the tergency of that time, when it was be coming obvious that Britain was not im-mune from possible invasion While ist provides no parallel to the speed and enthusiasm of its requitment, the muster of all men between 17 and 55 in 1903 under a Lover on Masse Act was in fact a precedent. The inception of the 1 D V or 11 G way a spontaneous move and two years later became minister of ment based on this and other historic

precedents, including the musters of 1545 and 1588, the train bands of 1642, 1667, 1719, and 1759, the volunteer movement of 1859 and the volunteers of the First World War. The chief difference between the H.G. and any other form of military force raised in the Brit. Isles since 1803 was that whereas the charge 4 Six John was that, whereas the others, e.g. Sir John Firebrace's Horse, the Militla, the Wemyss Volunteers and the Territorial Force or Army, had been kept away from the front line until they were deemed sufficiently trained to meet the enemy, the H.G. was experted, and themselves ex-pected, to meet the enemy wherever he might show himself in the country. But, of course, a great number of those who joined had seen service in the First World War, a fact which in all probability had its due effect in restraining the ardour of the Ger. forces which were reported to be available for manning the invasion barges. Men liable to be conscripted in the ordinary way were of course ineligible for the H.G. At first the H.G. was bardly an effective force at all, for no arms were available for their equipment other than a few thousand rifles and shot guns, old pikes and sabres and some Army revolvers and long barrelled Amer. revolvers used for clay-pigeon shooting. The formation of the H.G. at that moment in the nation's dilemma has been not inaptly called a gigantic bluff but, in view of the possible descent of Ger. parachutists armed with grenades and tommy-guns at vital spots such as factories, railway bridges, petrol dumps and Ordnance depots, the nuster of H.G., albeit crudely armed, was better of H.G., allost crudely armed, was better than no force at all for the purpose of supplementing the relatively few regular troops—the bulk of the regular divs, being in France or in the Middle E. On May 11 the General Staff accepted, in principle, the proposals for the formation of a defence force on a tn. and vil basis, giving the utmost lat. to local enterprise so as to launch the scheme with the minimium of delay and this indeed was the scheme on which the force was subsequently founded. In fact, even before Mr. Eden on May 14 broadcast his call for volunteers, the civilian pop. in certain parts of the country were forming themselves into bands to deal with hostile parachutists and the alm of the military authorities was to get this valuable movement on a regular footing as quickly as possible. It was on get this valuable movement on a regular footing as quickly as possible. It was on May 11 at a conference at the War Office that the name 'L.D.V.' was chosen but the popular name, 'Home Guard' was adopted two months later. The military authorities agreed on May 14 that the H.G. would form part of the armed forces of the Crown and would be subject to military law. The sallent features of the scheme were simplicity, decentralised control and the minimum of formalities. There was to be no estab, and no nav. There was to be no estab. and no pay, There was to be no estab. and no pay, though travelling allowance was given. Nor were there to be an officers or n.c.o.'s in the ordinary Army sense. Volunteer organisers were to elect and nominate to the Area Command individuals for appointment as company commanders. Arms, ammunition and uniforms were to

be issued under Command arrangements. It was on this incomplete and tentative basis that Mr. Eden's appeal was made and tt was fully justified by its results. The equipment originally envisaged for the H.G. consisted of a rife, beyonet, steel helmet, and arm brassard to be worn with civilian clothes. In fact even this equip-ment was beyond the actual possibilities at the time and it is said that when the official appeal was made the stock of rifics available in Britain was no more than 70,000 in all. The actual numbers of the H.G. in the early summer of 1943 approached 2,000,000. But by that time men could be compulsorily directed to serve if they were of an age and condition that justified that course. There were about 1,000 battallons, some of which were sev. thousand strong. The number of H.G. anti-aircraft batteries—for in the intervening years many had been directed to this role—was large and there were 43,000 officers in the H.G. General Service units and A.A. Batteries. It is stated on good authority that, by 1913, only 7 per cent of the men were ex-servicemen, this cent of the then were ex-servicement, this reduction being due to the elimination of the elderly and unfit and the average age of the H.G. was by that time slightly under thirty. They were now fully armed and trained, able to use their armed and trained, able to use thouse weapons which ranged from the bayonet to the 3 7 gun and yet remained the most inexpensive of military forces, a fact largely due to the patriotism and generosity of private individuals. The H.G. was its of private individuals. The H.G. was disbanded on Dec. 31, 1915. Parades, however, had ceased in Sopt. 1914 and orders were issued for the H.G. to stand down on Nov. 1, 1914. Delay in the formal disbandment was due to the necessity of facilitating the recall of arms and equipment. Officers were given bonorary rank in the highest rank they held for an aggregate period of six months. See C. Graves, The Home Guard of Britain, 1943.

Home Laundry, see under HOUSE-WIFFRY.

Homel, see COMEL.

Home Office. The Home Secretary is, as regards home affairs, the constitutional channel of communication between the king and his subjects, and all petitions or addresses to the king must be addressed to him through the Home Secretary. The powers and duties of the H. O. are of the widest and most varied kind, but perhaps the most important relate to the control of the Metropolitan Police, the exercise of the prerogative of mercy, the administration of the Factory Acts (see Factory Legis-LATION), extradition proceedings, the carrying out of the provisions of the Aliens Act and the Naturalisation Acts, and the general superintendence and control over prisons, criminal lunatic asylums and approved schools once called 'reformatories.' The Home Secretary appoints recorders, silpendiary magbirates, factory inspectors, and inspectors under the Explosives Acts under the Anatomy Acts, and the Crucity to Animals Act (or Vivisection Act). He sanctions by-laws of municipal bors, so far as they relate to 'order and

good governance.' He advises the crown who, having deprived his eyes of light, (q,v), as to pardoning convicted persons or endowed him with the dvine gift of song, commuting or otherwise reducing their I i 's blindness is accepted, it must be sentences, and he can license prisoners assumed that he became blind in later life commuting or otherwise reducing their sentonces, and he can license prisoners under sentence of penal servitude either conditionally or unconditionally He inspects the country police forces and can spects the country police forces and can advise the Treasury to withdraw ox chequer contributions if he finds such forces inefficient. All extradition proceedings pass through the hands of the Home Socretary, who makes the final order for extradition. He may refuse a certificate of naturalisation to an alien, and need give no reasons for so doing He grants licences to scientific bodies to experiment on animals He has power to authorise the exhumation and removal of bodies He performs the routine work in respect of the licensing, the making of a canon law, and its subsequent promulgation He prepares patents of nobility for perra and formal proceedings for the bestowal of honours also pass through the H O During the Second World War a great deal of work ful on the H. O in connection with the provision of air raid shelts and the provision of air raid shelts are the provision of the raid whether the provision of the raid whether the provision of the raid whether the provision of the provi for the public and other measures of public security, there being set up in the H O for those purposes a ministry of Home Security The Home Secretary is assisted in his duties by a part under societary, a permanent under secretary, three assistant mu secretaries and a

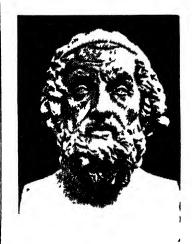
three assistant and a stress of the large clerical staff

Homer, great epic poet of Greece The date of his birth is quite uncertain dotted declared that Hestod and H. were contemporaries and lived 400 years before his own time. Most achielars now assign the Iliad and the clearly somewhat later the Had and the clearly somewhat later Odyssey to some date from the tenth to the eighth century BC Many the claimed to be his bp—Smynn, Chios Argos, Athens, salamis His poems were regarded as the basis of GK, literature, and overy chicated Gk had learnt them in his schooldays No real records of his life existed, but many keends grew up around his name Phere are extant eight lives, included in the Oxford text of H One of these, which is probably a H One of these, which is probably a literary forgery belonging to the second century AD, was falsely ascribed to Hero dotus, and contains the most popular legends with regard to his life. The bio grapher declares that H was the lilegiti mate son of Crethely, and that he was born near Smyrna on the banks of the Meles He was subsequently adopted by his mother's husband Phemius, and travelled extensively in Egypt, Italy, and the is of the Meditarranean, collecting materials for his epits, which he wrote on his return to Smyna During the course of his travels he had become blind, and spent the rest of his life as a wandering minstrel, singing his songs in the the of Asia Minor

and the is of the Archipelago.

The tradition that the poet was blind probably arose out of two references to blind hards in the Odyssey, in which a personal allusion was traced Demodocus, the blind harper who wang his lays in the halls of King Alcinous, is spoken of with great sympathy. He was beloved of the Muses, Aristarchus

for the two epics show a keen perception of an exuberant delight in line and form and motion The claims of Smyrna as his bp were supported by Pindar, Scylax, and Stesimbrotus But Chios had equally strong if not stronger, claims. In that is, there was worship of an anct. hero, Homeros, and an existing tradition of a family of Homerids. Its claims were also supported by Thucydides, Simonides, Acusilaus, and Hellanicus.



HOMER

It might be thought that the Iluad and the Odyssey were composed during the cooks which they describe, but it is now generally considered that H. drew on old sources and archaized to exclude anachronians His heroes belong to the bronze age, iron being hardly mentioned, act the poet betrays himself by quoting a proverb that uno draws a man on to quirrel), showing that iron weapons in his own day were in common use. As has be a said, the tenth to the eighth century is now the date assigned to H., although some modern authorities put him even later

The works of II were studied critically early times. Theogenes of very Rhegium (c. 530 s c) regarded the epics as allegories, so that he might reconcile its principles with the morality of his own His theory was accepted by Anaxa time or is and Metrodorus. Asnophon, Plato, and Aristotle carefully studied the structure and meaning of the poems, while Intimachus paid attention to the text. The great textual critic of anct. times was Other Alexandrian critics of

importance in this connection were Zenodotus and Aristophanes. The critical emendations and suggestions of Aristarchus are preserved in the Codex Venetus in the library of St. Mark, Venice (pub. by Villoison, 1788). The unity of Iliad and Odyssey as poems was almost unquestioned down to the eighteenth century. By his pub, of the Prolegomena ad Homerum in 1795, F. A. Wolf opened the controversy which is known as the 'Homeric question,' Wolf held that the Hind and the Odyssey consisted of a series of songs which were not not together until short which were not put together until about 500 years after they were composed. He argued that writing must have been unknown to H., that therefore the song were passed on from one generation to an other orally by the Rhap-odists; that since poems of such length could not be transmitted through centuries without any recourse to writings, the present form of the poems could not be the original form, and that, according to the 'voice of anti-quity.' Pelsistratis' first committed the poems of H, to writing and reduced them to the order in which we now road them. It is now generally admitted that the poems were certainly unwritten, whereas it is also agreed that it is possible for poems, even of such length, to have been memorised by the professional trained singers and ministrels of the Greena courts. There may, at the same time exist in the text many interpolations or deviations from the original form of the poems. Wolf's statement about Pelvipoems. Woir's statement about Petsistratus's collection of the poems has no earlier authority than Cleero (De Oratione, ili. 34). The controversy raised by Wolf was hottest during the first half of the nineteenth century. Gottfried Hermann, in De interpolationibus Homeri (1832) and De iteratis Homeri (1840), maintained that he was able to distinguish three elements. be was able to distinguish three elements in the *Ilian*, a pre-Homeric element, a Homeric, and a post-Homeric. Luchmann went so far as to divide the *Ilian* into eighteen iays, and declared that the original lays had been bröken up by interoriginal lays had been bröken up by interpolations and finally put into shape by Peisbtratus. The Wolfian theories were strongly opposed by Nitzsch in his Meletemata (1830) and Die Sagenpoesie der Griechen (1852). Welcker, in The Epic Cyrle, showed the early cyclic writers had been influenced in the structure and substance of their epic pooms by the Ulad and the Odyssey; and that the latter in their present unity of form must be dated before the cyclic writers. before the cyclic writers.

The question as to whether the Iliad

and the Odyssey were written by the same author was first raised by Xeno and Hellanicus, called of xop(covre, the Chorizontes or Separators. The chief arguments which have been raised in favour of and the Odyssey were written by the same author was first raised by Xeno and Hellanicus, called of xopicorres, the Chorisontes or Separators. The chief arguiness which have been raised in favour of the two poems are as cole authorship of the two poems are as supreme genius near whom none can be placed in the world's Hierature save Dante and Shakespeare; but that two poets of such greatness should have lived then seems improbable indeed. It is also argued that though there must be some

difference in style between the Iliad, a difference in style between the ream, a poem of peace, the great outlines and essential styles of the two poems are similar, whereas each is wholly different from anything olse produced by the writers of anct. Greece. The early Chorizontes argued in favour of two authors, by pointing out certain discrepancies between the two poems, such as the fact that the wife of Hephastus in the *Had* is Charis, while she is Aphrodite in the *Odyssey*. Modern scholars have based their arguments in favour of a later date for the Odyssey (and, therefore, a different author) on differences between the two poems of vocabulary, grammatical forms, of treatment of the heroic legends, of institutions, political and social, and of religious or moral outary, grammatical forms, of treatment of the heroic legends, of institutions, political and social, and of religious or moral outlook. (See also Giera E—Greek literature.) See Editions: D. B. Monro and T. W. Allen, 1912-19 (Oxford text); Iliad: W. Leaf. 2nd ed., 1900 02. T. W. Allen, 1931; Odyssey: W. W. Merry, J. Riddell, and D. B. Monro, 1876 1901; W. B. Stanford, 1917-48; Scholta to Iliad, W. Dindorf and E. Maass, 1875-88; Scholta to Odyssey, W. Dindorf, 1855. Transs. LATIONS (Vorso): G. Chapman, 1598-1616; A. Pope, 1715-26; W. Cowper, 1791; Iliad: A. S. Way, 1885-88; Odyssey; W. Morris, 1887; J. W. Mackail, 1903-10; S. O. Androw, 1948; F. L. Lucas, 1948. (Prose): Iliad: A. Lang, W. Leaf, and E. Myers, 1883; A. T. Murray, 1924-25; Odyssey: S. H. Butcher and A. Lang, 1879; A. T. Murray, 1919; T. E. Shaw (Lawrence), 1932; E. V. Rieu, 1946. Dictionaries, Concordance to Iliad, 1875; H. Dunbar, Concordance to Odyssey, 1880; D. B. Monto, Grammar of Homeric Dialect, 2nd ed., 1991; R. J. Cunliffe, Lexicon of the Homeric Dialect, 1924. CRITICISM: M. Arnold, On Translating Homer, 1861-62; U von Wilsmowitz-Moellendorf, Homerische Ontersuchungen, 1884, Ilias und Homer, 1916, Heimkehr des Odyssey, 1927; A. Lang, Homer and the Epic, 1893, Homer and his Age, 1906, World of Homer, 1910; W. Ridgeway, Eurly Age of Greece, 1901-31; H. Browne, Handbook of Homeric Study, 1905; H. M. Chadwick, Herow Age, 1912; E. Drorup, Homer-problem in der Gegenvart, 1921; E. Bethe, Homer, 1911-27; J. A. K. Thomson, Studies in the Odyssey, 1911; E. Drorup, Homer-problem in der Gegenvart, 1921; P. Cauer, Grundfragen der Homerkritik (3rd ed.), 1921-23; J. T. Sheppard, Pattern of the Hidad, 1922; T. W. Allen, Homer, Origins and Transmission, 1924; G. M. Bolling, External J. T. Sheppard, Pattern of the Hind, 1922; T. W. Allen, Homer, Origins and Transmission, 1921; G. M. Holling, External

are: 'Life Line' (1884), 'Launching the Hoat' (1881), 'The Look-out' (1897). 'The Maine Coast.'

Home Rule. The demand of Ireland for H. R., which was defined by John Red-mond, the leader of the movement, as the rule of a local Irish parliament created specially to deal with Irish affairs, was for some fifty years the stumbling-block of Brit. politics. The demand was first put forward as a definite policy in 1871, but it was not till 1885, after the extension of the franchise, that Ireland returned a majority for H. R., when 85 members out of 103 were pledged to support H. R. From that time down to 1893 the Liberal party's adlierence to the policy of self-gov. for Ireland was associated with the name of Gladstone, who introduced Bills in 1886 and in 1893. The latter Bill was carried in the Commons by a narrow majority, and promptly thrown out by the House of Lords. It set up a legislature and executive in Ireland to control Irish affairs, subject to the supremacy of the Imperial Parliament; and there were further safeguards to that supremacy in the shape of guards to that supremacy in the snape of provisions analogous to those of the Colonial Laws Validity Act (see COLONIAL LAW), an express prohibition from dealing with the land question for three years, and a reservation of some thirteen important topics of 'cg. lation to the exclusive consideration of the Imperial Parliament. The depression in the fortunes of the Liberal party which endured these often for a needed of seventeen years. thereafter for a period of seventeen years left the question dormant until after they were returned to power in 1906. The election of 1906 was generally understood to have been contested on the fiscal issue, to have norn contexted on the recal issue, the nominees of the Liberal party expressly undertaking not to introduce a H. R. Bill, but in 1907 the Irish Council Bill for the estab. of an Irish body to expend in Ireland the proceeds of Irish taxation was introduced and withdrawn. At the two later elections they made no such declarations of intention, and in April 1912, Asquith introduced his H. R. Bill. This Bill, which passed its second reading by a majority of over 100, was based on the model of the first Bill; but the financial provisions were more explicit. It estab, an Irish Exchequer and an Irish Consolidated Fund, and provided that the whole of the cost of Irish gov., with the exception of the expenditure on the reserved services, should be borne by the Irish Exchequer. Asquith's Bill passed the House of Commons in Jan., 1913, but was thrown out by the House of Lords. It was passed thereafter in three successive sessions by the Commons and so by the operation of the Parliament Act, 1911, became law irrespective of the assent of the House of Lords (see PARLIAMENT AOR, 1911). The Bill included Ulster and, in its earlier stages, was followed in 1012-1913 by stout resistance in that quarter, where the controversy incited by it rose almost to the brink of rebellion. Two of the chief protagonists in the resistance were Sir Edward (later Lord) Carson and F. E. Smith (later Lord Birkenhead); but this campaign suddenly died down and

the Bill passed the House of Commons in May 1914. The Lords excluded Ulster, and the King then made an attempt to bring the parties together, but without success. The outbreak of the First World War, however, changed the whole face of things, and the Bill thereafter became law without further resistance for the whole of Ireland in Sept. 1911. Its operation, of Ireland in Sept. 1914. Its operation, however, was postponed by the Speaker until after the War, and the sequel to this postponement was that the Bill never came into operation at all (see further value Virus, 1918). under EIRE; INISH FREE STATE). Home Rule Movement, Scottish, see

SCOTHER.

Homestead, hor. in Allegheny co., Pennsylvania, U.S.A., on the R. Monongahela, 6 in. S.E. of Pittsburg. It was founded in 1871, and was incorporated in 1880. Here are the famous iron and steel works of the Carnegie Co., which rank with the largest in the world. At these works in Issue occurred a tremendous strike, the rioting in connection with which had to be quelled by state troops. Pop. 19,000. Homicide, see Manslaughter; Murber; and Ingarity.

Homildon Hill, one of the Cheviot peaks, beat the vil. of Homildon or Humbleton, 20 m. S. of Berwick, Northumberland, England. It was the scene of the battle (1102) in which Hotspur and the earl of March defeated the Scots under earl Douglas.

Homily, discourse addressed to the congregation in a church. It was customary in the Jewish synagogues after the reading of the law for an explanatory discourse to be given, and this practice was early adopted by the Christian Church. The Alexandrian school was particularly rich in such exegotival expositions, the most tamous anct, collection of Hs. being that of Origen in the third century. The Hs. of the Church of England are a collection of sermons (see Article xxxv.) for the use of undermed preachers. The first part was pub. in 1547, the second in 1563.

Homocyclic Compounds, organic ring compounds in which all the atoms composing the ring or rings are atoms of car-bon. Examples are bonzene, naphthaline.

and anthracene.

Homosopathy (Gk. ouolos, like, widos, disease), name given to a system of mediome introduced by a Ger, physician, samuel Hahuemann, who was b. at Leipzig in 1755 and d. in 1843. In his Organion of Medicine, Hahnemann set forth the principles on which his system was based. These were: (1) That morbid conditions are circled by the same medicines which would need use the disease in cines which would produce the disease in healthy bodies, in accordance with the old orlief expressed by the Lat. phrase simila similibus curantur (like is cured by the). (2) That drugs administered should be simple and not compounded. (3) That in most cases only very small quantities of the drug should be given, on the theory of dynamisation, or increase of force with diminution of matter, such dynamisation, it is alleged, being produced by trituration (i.e. grinding to a fine powder) and by extreme dilution. There are very few followers of H. at the present-day. In contradistinction to H., the ordinary method of treating disease is described as heteropathy or altopathy. See also HANNEMANN and MEDICINE. See T. L. Bradford, Life and Letters of Hahnemann, 1895; J. H. Clarke, Hahnemann and Paraceleus, 1923, and Constitutional Medicine, 1926; E. A. Neatby and T. G. Stonham, A Manual of Homætherapeutics, 1927.

Homogeneous and Heterogeneous are two mathematical terms. The former is applied to magnitudes which are commensurable, and in algebra to all terms of the same degree, as for instance x and y. The word is Gk, for 'of the same kind.' Heterogeneous, which is Gk, for 'of a different kind.' is the opposite of 'bomogeneous,' and describes a group of incum-

geneous, and describes a group of incommensurables, e.g. spheres and plane circles, Homolousian, theological term, which became a party word at the time of the Arian controversy. It is derived from the words bacs, 'same,' and owar, 'sunstance,' and denotes the consubstantiality of the Father and the Son in the Hessed Trinity. The more moderate Arians, unwilling to say that the Son was of a different substance from the Father, wished to use the phrase' of like substance.' See

ARIUS: ATHANASIUS.

Homologation, in Scots law, denotes an act by which a person signifies his approval of a deed so as to make it obligatory upon him in spite of any defects in it. A common instance of H. occurs where a person capable of consenting approves a deed granted by him at a time when he was legally incapable of giving his assent to its terms, as e.g. by a minor on his attaining majority in respect of a grant made during minority without the consent of his curator. But to be valid H. must be an act from which it may be clearly inferred that the person homologating both knew and approved the contents of the instrument. See G. Hell, Commentaries on the Law of Scotland, 1810; J. Erskine. Principles of the Scotch Law, 1754.

Homologous Series. In chem., a series of similar organic compounds, any two consecutive members of which differ in molecular constitution by I carbon atom and 2 hydrogen atoms. There are sov. such series, and owing to a certain amount of similarity of constitution the substances forming them are conveniently studied by reference to their particular series. For example, the paraffins comprise the following bodies: methane, CH.; ethane, C.H.; propane, C.H.; butane, C.H.; ethane, C.H.; propane, C.H.; butane, C.H.; ethane, C.H.; containe, C.H.; ct. It is seen that each member contains one atom of carbon and two atoms of hydrogen more than a molecule of the preceding member, and the series as a whole may be represented by the algebraic formula C.H.; The homologues, or members of a H. S., may usually be obtained by similar methods, and they are alike in their general properties. Other H. S. are the olefines, general formula C.H.;; the acotylenes, general formula C.H.;; the monohydric alcohols, general formula C.H.;; the monohydric shedness; fatty acids, etc.

Homology, conformity of type which is suggestive of development or inheritance from a common ancestor, and is used as one of the morphological arguments which support the Darwinian theory. H. may be indicated by members of the same class, resembling one another in their general plan of organisation, as in the case of the mouth parts of insects, though these show innumerable varieties of form and use, or as in the case of the general structural resemblance of the arm of man, forcleg of horse, wing of bird, flapper of seal. Serial homology (also called metamerism or metamic segmentation) is that unity of type found on comparing the different parts or organs in the same individual, e.g. the segments or rings and their appendages which comprise the body of a worm.

Homology, see may water miniminately. Homology, see may water to one of the two sub-orders of Hemiptera (bugs) (q.c.), whose members differ from those of the Hoteroptera in that their wings cover the abdomen in a rooflike manner and both pairs of wings are alike (hence H. = similar wings). Heteroptera = different wings). The basal and apical parts of the wings are generally of the same consistency, and sometimes all four wings are transparent: the head is furnished with three occili (simple eyes) placed triangularity on the summit, and the front of the head is bent over, touching the cover (head is bent over, touching the cover (head is per lice). This suborder includes the Creadide, Gulgoride, Membracidie, Cercopides, Jassides, Psylides, Aphda (green filos), Aleurodides, and Coccides (e.g., the cochineal insect).

Coccide (e.g. the cochineal insect).

Homs, (i) tu. in Libya, pop. 30,000.
(2) tn. and sanjak of Syria, see HKMS.

(2) to, and sanjak of Syria, see Hews.

Honan, one of the Central Provs, of China, bounded on the N by the Hwangho, on the S. by Hupeh, on the E. by Nganhui, and on the W. by Shend. The country is traversed by the Funiu Shan Mts., running E. and W. It is very densely populated, largely owing to the fertility of the soil. The chief products of the prov. are cotton, wild silk, cereals, and fruit. Coal is found near Honanfu, Juchow, and Lushan: other minerals are fron, sulphur, and saltpetre. Some optum is grown, the traffic in this being very extensive, especially the morphia pill traffic in the N. part of the prov. To the N. of the Hwangho, there is a heautiful fertile plain, with hamboo plantations and groves of cypress. There are good roads and the Peiping-Hankow Railway traverses the prov., having branch lines to Honanfu and Kaifeng (the cap.). During the civil war much fighting was carried on in H. The area is 64,500 sq. m. Pop. 28,473,000.

the civil war much against was carried on It. The area is 64,500 sq. m. Pop. 28,473,000.

Honanfu, city in Honan. China, situated on Lo R., a trib. of the Yellow R. Under the Chon and following dynasties, it was the cap. of China and was called Lo-Yang. Coul mines are in the vicinity. During the civil war Marshal Wu fled to H., on the fall of Chongchow in 1927.

Honawar, or Honore, seaport on W. coast of India, N. Kanara dist., in the Presidency of Bombay. It was visited by Ibn Batatu (1342). Pop. 59,900.

Honda, tn. (alt. 690 ft.) of Colombia, S. America, on the Lower Magdalena R., 60 m. N.W. of Bogota. The riv. is navigable up to this point. The tn. is an old Sp. settlement with picturesque narrow streets Pop. 12,000.

Hondecoeter, Melchior d' (1636-95), Dutch painter, b. at Utrecht, Holland, a pupil of his father, G. de H., and uncle-Jan Baptist Weenix. He was a skilful painter of poultry, depicting the feathered families with great sympathy. His most famous painting, 'The Floating Feather,' famous painting, The Floating Feather, hangs in the Amstodam gallery. Honder, coeter's paintings may be seen in the National Gallery, London, and in the Liverpool, Herlin, Dresden, Hague, Paris, Leningrad, Florence, Venice, and Vionna galleries.

Hondo, see JAPAN.

Honduras, republic of Central America. lying between the Caribbean Sea on the N., Nicaragua on the S. and E.. and Guatemala on the W. Area about 41,300 sq. m. The country is mountainous forming an elevated tableland of an average height of 8000 ft., rising to 10,120 The Cordillers are continued from Nicaragua into the S. portion of the country. The highlands of H. are not so high as those of Guatemala, to which they are closely related colomically. The vol-canic plateau, with its flows of dark-coloured lava and its beds of ash, faces with the steep escarpment toward the Lempa Valley of Salvador. The highest Lempa Valley of Salvador. The highest elevations are in S. H., near La Esperanza and Tegucigalpa, where there are sev. peaks about 8000 ft. high. There are a few inter-montane busins composed of gently rolling, tilly surfaces which lie at elevations between 3000 and 4500 ft. Block ranges, similar to the central high-Block ranges, similar to the central nighlands of Guatemala, are found in N. H.
The chief valleys are the plain of Comayagua, and those formed by the rivs.
Humuya and Goascoran. The former is a trib. of the Ulun, the largest riv. in the country, which flows N. into the gulf of H. Other important rivs. are the Segovia, forming the houndary with Meanware forming the boundary with Nicaragua, the longest riv. in Central America; the Nacaome, Aguan, Rio Nogro, and Choluteca. The chief is, belonging to H. are the Bay is, and Tigre, Sacate Grande, and Gueguonsi in the bay of Fonseca. The climate along the Atlantic coast is oppressively hot, but on the highlands the temp. is mild. Cattle-rearing is the chief indusis mild. Cathe-rearing is the chief industry of the inhabs., but breeding is not carried on scientifically. The woods yield valuable tinber, It. has an abundance of hard and soft woods. Mahogany and other hardwoods grow in the N.E. part of the country, in the valleys and near the S. coast. The most important hardwoods other than mahogany. near the S. coast. The most important hardwoods, other than mahogany, are grenadino, guayacan, walnut and rose-wood. Stands of pine occur widely in the wood. Stands of pine occur widely in the interior. Bananas, coconuts, orangos, lemons, maize, tobacco, cocou, indigo, and sugar are cultivated. The chief culture is that of bananas, which are grown on the Atlantic coast. In 1943—15 over 9,000,000

United States. Panama hats, footwear, cigars and soap are the chief manufs. mineral resources of the country-which comprise gold, silver, platinum, copper, antimony, zinc, etc.—have not been developed on a large scale: only gold and silver are now mined. Brown coal seams have been found. There are rich fisheries as yet undeveloped, and Turneffe sponges are the finest in the world.

Cape II. was discovered by Columbus in 1502, and became a Sp. colony. Comayagua, in the rift valley, was for a long time, the leading th. of the highlands of H. Founded in 1540 on the road between the silver infees and Guatemala, it became the political centre of this part of the Sp. domain, and continued to perform the functions of local administration until Tegnicipalpa was selected as the cap. of independent II. in 1827. The settlements, which are grouped in the rift valley around Comayagua, like those farther W, grow muize for local subsistence, and produce coffee and cattle for sale. In 1821 it threw off the Sp. yoke and loined the Federation of Central America. In 1839 it became an independent state, and was subsequently in volved in frequent wars with Guatemale silver mines and Guatemala, it became the volved in frequent wars with Guatemala It has suffered from internal strife, parti-cularly during the civil wars of 1883 and 1903. In 1907 war was declared against Nicaragua in which Bonilla, the Hon-duran president, was defeated. In 1911 that general was re-elected president. There was a rising in 1931 in the N. due to unrest among the banana plantation workers led by General Ferrera, who was killed by Govt. troops. A Congress of Deputies composed of thirty-eight members is elected for six years by popular vote and is in session for some two months of the year. The executive power is vested in the President, who is nominated and elected for four years. When Congress is not sitting, affairs are directed by a permanent Commission of some five members—a modification of the Constitution which dates from 1921 (and further modified in 1936). The administration is in the hands of a council of ministers. The National Univ. is at Tegucigalpa, the cap. (pop. 66,000). Other tns.: San Pedro Sula (22,100), La E-peranza (11,000), Nacome (10,000), Santa Rosa de Copun (6000), Choluteca (5000), Comayagua (5000). Ports: on the Atlantic coast, La Ceiba (12,100), Tela (10,400), Puerto Cortez (8000), and Truillo (7500); on the Pacific coast, Amapula (3000). The port of entry for the bay Is. is Rostan. The total pop. (1945) was 1,200,500, including aboriginal tribes, 35,000 (chiefly Mosquito and other Indians all speaking different languages). by a permanent Commission of some five Indians all speaking different languages).
The Sp. speaking inhabs, are chiefly mesticos, i.e. Indians with an admixture of Sp. blood. On the N. coast there is a considerable proportion of negroes, working for fruit-trading companies; some 3000 of these are Brit. subjects and their immigration is now forbidden.

By the completion in 1943 of the Inter Atlantic coast. In 1943-45 over 9,000,000 Amer. Highway, H. is connected with stoms were exported, mostly to the highway system of Guatemala, El

Salvador and Nicaragua. An Inter-Ocean Highway linking Tegucigalpa with both the Caribbean Sea and the Pacific Ocean, is under construction. There are only three railways and these are confined to the N. coastal region, where they are used mainly for the curriage of bananas. Tegucigalpa is not served by any railway and there are no international rail con-nections. The total railway mileage is The road service, generally unsatistic has been improved. There is factory, has been improved. There is an air service and telephones and tele-graphs. There are seven gov. wireless stations and four broadcasting stations. See H. Jalliny. La République de Honduras, 1898; R. M. Lopez, Geografia de Honduras, and Historia de Honduras (Tegucigalpa) 1919; A. B. Quinones, Geografia e Historia de Honduras (Choluteca) 1927; toria d. B. Reyna, Honduras (Tegnelgalpa), 1930; C. M. Wilson, Central America, 1941; Preston E. James, Latin America, 1941.

Honduras, British, see BELSIZE and BRITISH HONDURAS.

Honduras, Guif, or Bay of, broad basin of the Caribbean Sea, skirting Honduras, Guatemala, and Brit. Honduras in Cen-

tral America

William (1780 - 1812),Hone, phletcer, set up in 1817 as a bookseller, and soon became notorious as a publisher of political lampoons, for the issue of one of which he was unsuccessfully prosecuted. He became yet better known when he issued sev. satires written by himself, with illustrations by George Crukshank. The best of these are The Political House that Jack built (1819), and The Monn in the Moon (1820). Perhaps he is to-day hest remembered by his Leery Day Rook (1827), and his Table Look (1819), which are still obtainable in modern eds.

Honegger, Arthur, Swiss composer, b. at Le Havre, France, 1892. He possesse-great technical ability, and has evolved a modernist style through contrapuntal modernist style through contrapuntan methods. Especially important are his oratorie King David (1922) and his 'mined symphony' Horace Victoricur (1922); and he is the composer of the popular 'programme 'piece', Pacific No. 231 (1923), which was inspired by a modern Amer. long-distance locomotive (and closely imitates its noise by the means available in a symphony orchestra), and Rughy. H. is one of the group of composers known as 'les Six.' See Studies by A. Roland-Manuel, 1925; A. George,

1926; and W. Tappolet, 1938. Honesty, or Lunaria biennis, species of Cruciferse, grown in Brit. gardens, is a native of Europe. It is a hardy plant bearing racemes of likac-coloured towers which have no scent, and the fruit which

follows them is a silicula.

follows them is a silicula.

Honey, thick syrup collected by bees and also by a few species of wawn and by honey- or pouched-ants. The bees suck meetar from flowers and empty it from their crops into the cells of their hives.

H. is most plentiful where flowers lux-crists and when the weather is dry and warm. The endry yearned the H of Mt. The ancts. vaunted the H. of Mt. Hybia in Sicily, and the aromatic, highly-

granulated II. of Narbonne is famous to this day. Virgin-H., gathered by young bees before they have swarmed, is finer than the H. of old hives. The colour than the H. of old hives. The colour varies with the source: heather-H. is a deep golden-yellow, and the H. from white clover a greenish-white. The Koran refers to if. as a liquor' wherein is a medicine for men,' and in India and elsewhere its value as a gentle layative has long been recognised. It was a favourite article of food among the ancient (iks., and was an ingredient in such popular beverages as mead, the 'claire' of (hancer's day, and the Rom., 'mulsum.' Chemically, it. is composed of levulose (36 45 per cent.), dextrose (36 57), water, mineral matter, pollen, and wax. On an average H. contains over 70 per cent of invert sugar (q.r.). Sturch, water, glucose, and gypsum are common adulterations. In norsum are common adulterations. In normal years, Hungary and Poland are among the chief H. producing countries, in favourable years Hungary can produce 9000 tons. It is also imported from California, New Zesland, and Australia. It is a minor colonial product. There are small bee keeping industries at Mauritius, be keeping industries at Mauritius, Cyprus, Palestine, Brit. Honduras, Brit. Guana and various W. Indian colonies. The only colony with a substantial trade is Jamaica—averaging 800 tons annually.

Honey-buzzard, popular name of Permis apirorus, a species of talconiform bird belonging to the family Butconing. It is occasionally found in England and is common in the wooded dists, of W. Europe, troin whene it intgrates in winter to Africa. Its food consists of insects, small maninals, birds, etc., which it devours upon the ground; it derives its name from the habit it has of plundering the nests of bees and wasps for the sake of the honey. The plumage is variously coloured and is often undistinguishable from the dense foliage in which the H. prefers to nest.

Honeycomb-moth, popular name given to members of Cintleria, a genus of lepidopterous insects belonging to the family Pyralide. Certain of the species namity Pyrainde. Certain of the species miest bechives, where they deposit their eggs; the larvie feed on the count, through which they make tunnels. There are two broads in the year, the first appearing in May and the second in full summer. G. mellonella is the largest and best-known

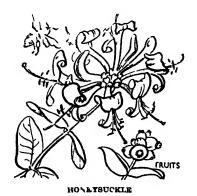
species.

Honey-dew, sweet and sticky exudation found, especially in warm, dry weather, on the leaves and stoms of many trees and plants. Some hold that it is invariably associated with Aphides. Cocci, as, for instance, Coccus mannifera, and other insects. For it is known that Aphides excrete from the abdomen a fluid Indistinguishable from the theory believe that guishable from H., the theory being that they prick a hole in the leaf or stalk and so suck the excess of sugar from the flow-ing sap. Others believe that without these insects H. would still form whenever the tissues of the plant are broken. H., which is also called manna, has been known to fall in showers. As it closes the pores when it dries, and thus hinders the natural growth of a plant, gardeners use a syringe to wash it away. Honey-eaters, name given to the species of Mcliphagida, a large family of passert form birds found in the Australian region They are small birds with beautifulty coloured plumage, long curved beaks, and long tails their habits are active and pugnacious, and they are constantly hopping from true to tree in scarch of honey and insects which constitute their food The species of Meliphaga are among the most brilliantly pluminged of all birds Mauricoms being on of the best known Anthomis the New Zeiland bell birds and Manorhina melanophrys the bell bird of Australia are remarkable for their clear tinking voice

Honey Flower, see MFTIANTHUS

Honey-guide name given to the species of Inticular and Prilodiscus two genera of consulform birls which constitute a sub family Indicatorine. They were formed to placed an ing the encloses but are more nearly related to the woodpeckers and barbets must of the species are found in Africa but I rechipelagus and I menor inhabit the Malay Pennsula and Borneo. Their name is derived from their curious habit of confucting tray liers in the direction of been nests by means of a shrill ery or has and they will flutter round until they are sure that they are bying followed. Pregular is a native of Natal and Panagas of Equatorial Africa.

ATHER
Honey-locust Tree, or Three-horned
Acacia, 1 of the name of the legan mous
plant the hit of a triandhes a native of
the Carolinas and Virginia. The trunk
and branches of the young tice are
covered with prickles the foliage is of a
light shuming aren and the seeds are
covered with a sweet pulp.



Honeysuckle, or Lonuera Perulymenum, species of Caprifoliacee found in hedge rows of Birtain, often known by the name of woodbine. It is a shrub of climbing habit, bearing heads of white flowers which yield a sweet fragrance, at night hawkmoths are attracted to the plants by their scent, fertilisation takes place and

the flowers change to a yellow colour The fruit of the H is a bright red berry The term Fr. H is applied to the leguminous herb Hedysarum coronarum, which grows in Spain and Italy It is a hardy peren nist which bears deep red or white flowers, and in Calabria is given to horses and mults as food

Honeysuckie Tree, see BANKSIA

Honileur, seaport on the bank of the being catuary, 8 m 5 E of Havre, in the dept of Calvados, France It is a rail way terminus, controls a brisk fishingtist and exports agric produce to England There are antiquities of interest Por 8300

Hong Kong (from Hiang-Kiang, fragrant strong a), is in the China Sea, separated from the coast of China by the Lamun from the coast of thina by the Laimun or I vemoon (Carpfish) Pass, a strait less than half m in width H k is a intercolonal dependency and hes S of kwingtung Prov and k of the Pearl R estury. The colony includes the ters of Hing kong is which has an area of 32 at m with a length of 11 m and a breatth varying from 2 to 5 m. the S tip f the mainland pennisula of Kowloon with m a 14 sq m, and Stonecutters is, con it of an area of hinterland with many is (net 3) sq m) The New Ters
stick h northwards to the shum Chun
R and include the seables of Deep Hay
to the W and Mus Bay to the E. The total area of the colony is thus about oth area of the colony is the about 31 a; in most of which is steep and in productive hillside. If K. Is rises steep is from the N shore to a range of treeless hills of volcanic rock of which the highest point is Nictoria Peak (1823). the scencia especially along the ft) de is indonted shores is superbile to ween the hills and the N water front lies to ity of Victoria. Most of the urbilet if the is is fist increalined land. In is a almost land locked natural barbeer values in width from I to 3 m and is ente ed from the l by a tep water chan nel through Lamun Poss and protected free the W by a cluster of is through the the way by a chiefe or a through with a shall were channel gives access to stal vessels. If k harbour has been the gateway to schina, lying, as the challenge of the kowbon Penhaula, which was the characteristics. is flit and has been extended in area by reclanution has gr wn greatly as a reliental suburb and besides, contains the chief industrial are a of the colony, on the W shore are wharves tor ocean-geng ships and at the being of the poulo ult is the terminus of the kowloonutto Railway Between kowloon and the New Tera to the New Tera are steep and harren, the high st point being the peak lamosh in (110 ft), 7 m N W of killon, NW of while peak to the celony's largest area of cultivable land stretching to Deep Bay. The E half of the New Tera mainland, mountainous and unincidustive extends to the colory and stretching to the peak to the colory and the stretching to the peak to the section of the total stretching to the peak to the section of the total stretching to the section of the total stretching to the section of the sect unproductive, extends to the rocky and indented coastline of Mira Bay Where cultivation is possible vila exist and crops are grown; intricate terracing brings as

much land under cultivation as possible and the traditional methods of Chinese farmers have changed as little in H. K. as in China. Few of the 75 adjacent is, included in the New Ters. show traces of the impact of W. civilisation and many are uninhabited. The largest is, is Lantan, rugged and beautiful, lying W. of the harbour. It is more than twice the size of H. K. is, and its highest peak is 3000 ft. Wooded ravines and scrub-covered spurs, where may be found plenty of wild boar and barking deer, slope steeply upwards. The other is, are much smaller, the smallest inhabited is, being Ngai Ying Chau (8 ac.). The total estimated pop. of the New Ters. is 60,000.

Cimale.—The climate of H. K. is subtropleal and conditioned largely by the monsoons, the winters being cool and dry and the summers hot and humid. The climate is unfavourable to Europeans owing to the rapid alternations of heat and cold and the chief tn. retains the violent heat of the sun long after sunset, being hedged in by rocks which keep off the cool evening breezes; but for six months of the year the weather is cool and dry with long periods of sunshine daily. The summor is the rainy season, three-quarters of the anu. rainfall falling between May-Sept. Fog and very low cloud are common in March and April when S. winds may temporarily displace the cool N.E. monsoon, which sets in during Oct. and lasts till April. The S.W. monsoon prevails from May to Aug. From June to Oct. H. K. may be affected by typhoons, but they are sometimes experienced before and after this period. A typhoon whose centre is over or near H. K. is accompanied by hurricanes, which may result in much damage and loss of life. The mean monthly temp, ranges from 59° F. in Feb to 82° F. in July, the yearly average being 72° F. The temp, rargely rises above 95° F. or falls below 40° F.

Commerce and Industry.—The main primary product of H. K. is slip, deep-sea fishing being an important occupation. Agriculture is limited by reason of the rugged and mountainous terrain and mineral resources are believed not to be great. A new Dept. of Agriculture was set in very soon after the colony was retaken in 1945, which not only did much to restore the farming industry to what it was before the war but also to establish it on a much sounder basis with a view to steady development on scientific lines. Some progress was also made towards the organisation of co-operative production and collective marketing was estab, in a few areas among tomato-growers. A small Gov. experimental station which existed in the N. Ters. before the war was restarted after the Brit. re-occupation. Before the war thore was a Botanical and forestry Dept., which took charge both of the Botanical Gardens and gov grounds and of the afforestation of the bill-sides. After the war it was decided to have two independent depts., one for forestry and one for gardens. What little mining is done is entirely in the New Ters. Only five small mines are at present being

worked; one produces load and silver, two are working wolfram deposits with indifferent success, and the other two produce kaolin and magnetite respectively. Local industry includes shipbuilding, ship repairing, engineering and a wide range of light industries, the main products of which are textiles, rubber goods, buttons, leather goods, cigarettes, matches, pre-served ginger and confectionery, tinned goods, glussware and paint. The majority of H. K.'s working pop. is engaged in occupations connected with commerce companies connected with commerce rather than production but onterprise and cap, are not lacking when an economic demand arises which can be satisfied by the expansion of local industry. H. K.'s industrial production is almost entirely in Chinese hands, most of the factories being ber of factories registered in 1941 was 1200; at the end of 1948 200. 1200; at the end of 1946 36° wire leadstered and a further 537 had applied for The outbreak of war with registration. Germany had a stimulating effect on the colony's industries, particularly on the larger dockyards and on local factories producing war equipment; but during the war against Japan industrial activity in the colony was brought virtually to a standstill. By the end of 1946 the recovery of production capacity varied from twenty to fifty per cent of pre-war levels.
On the whole little direct war damage was done to factories except to the shipbuilding and repair yards and to a sugar refinery; machinery was in many cases removed by the Jap, and could not be re-covered. Refore the war more persons were employed in the textile industry than in any other single industry, there being 25,000 engaged in cotton weaving boing 25,000 engaged in cotton weaving in 150 factories—making cheap shirtings and prints for export to Malaya, Ceylon, and E. and W. Africa; and 15,000 in 450 knitting factories. At the end of 1946 there were 90 cotton-weaving factories in operation and practically no knitting factories. The manuf, of electric torch batteries gave work before the war to 2000 or 3000 workers in twenty factories. During 1945-46 ten resumed operation, but production in 1946 was restricted to about twenty per cent of pre-war. were also eleven factories engaged in the manuf of preserved ginger, all of which resumed operation in 1916, but the total of employees amounted only to 500 as against 3000 in 1941 and production was far below pre-war level.

The chief tn. of H. K. is Victoria, the seat of gov. and of trade, which stretches for 5 m. along the N. coast. It is built in three layers, the Prnya or Esplanade, which is given np to shipping, the Chinese quarters being beyond the commercial portion; the second layer which contains gov. houre and other public buildings and the Peak, or third layer, which is reached by a cable tramway. Before the war frequent scheduled passage and cargo services connected H. K. with the world. Ships of many nations were to be seen in the harbour, the most frequent callers, apart from the Brit. P. and O., Blue Funnel, Ben Line, Bank Line, Ellerman's and

Canadian Pacific Lines, being Amer., Scandinavian and Fr. ships. In addition to ocean-going tonnage, there was a large to ocean-going tonnage, there was a targe traffic in cargo and passengers between H. K. and Chinese provs.; this was largely carried on by sailing and motor junks, but riv. steamers, Brit. and foreign, also accounted for a fair proportion. The port facilities were seriously impaired both as a direct result of hostilities and also through neglect during the Lan. ocalso through neglect during the Jap. oc-oupation. The total shipping entering and clearing during 1946 was 45,484 vessels of 11,244,311 tons: this, compared vessels of 11,244,311 tons; this, compared with 1939, showed a decrease of 29,133 vessels and a decrease of 19,653,637 tons. Some 37,922 vessels (10,988,170 tons) were engaged in foreign trade, compared with 23,881 vessels (21,196,466 tons) in 1939. But throughout 1946 there was a steady quarterly increase in the number of vessels using the port the tonnage rising from 492,189 in the first quarter to 1,403,021 in the last. Over 1946 foodstuffs beaded the list of imports (about H. K. \$210 million) followed by oils and fats (\$114 million) plece goods (\$100 milfats (\$114 million) piece goods (\$100 million) and metals (\$10 million). The larnon) and metals (\$10 minon). The largest item of experts in 1946 was ols and fate (\$143 million), followed by piece goods and textiles (\$128 million) fond stuffs and provisions (\$116 million), Chinese medicines (\$40 minon), metals (\$20 million) to the constant of \$20 million). (\$39 million) and paper-ware (\$31 million). Trade returns do not differentiate between re-exports of overseas commodities and those produced in the Colony, but exports of those goods in which local factories are interested show that singlets, shirts, etc., (value \$13 million), electric torches and

(vaine \$13 million), electric forches and batteries (\$9 million) and rubber shoes (\$34 million) were exported.

Government.—II. K. is administered by a governor assisted by an executive council and a legislative council. The executive council, which is consulted by the governor on all important administrative matters, includes the senior military tive matters, includes the senior military officer, the colonial sceretary, the attorney general, the secretary for Chinese affairs, the financial secretary (who are members ex officio), and such other members, both official and unofficial, as may be appointed. At the end of 1947 there were eight official members (including the five excellers members) and seven unofficial members. officio members) and seven unothcial members, two of whom wore Chinese. The legislative council consists of not more than nine official members, including the same five ex officio members listed above, and not more than eight unofficial mem-bers. At the end of 1916 there were nine bers. At the ond of the control members and seven unditicial members. The procedure of this Council, with the advice and consent of which all

posals for a revision of the constitution, providing for the estab. of a municipal council (to which many of the functions of the present gov. would be delegated), and consisting of lifteen members representing the Chinese, and lifteen the non-Chinese sections of the pop. At the resumption of civil gov. in 1946 the normal judicial system of H. K. was restored. The Supreme Court of H. K. has the same jurisdiction as the English Courts of Kings Bench, Common Pleas and Exchequer have or had in England, and is a Court of Oyer and Terminer and Gaol Delivery, Assize and Nisl Prius, with jurisdiction in Probate, Divorce, Admiralty, Bankruptoy and cruminal matters; and it is also a Court of Equity with such and the like jurisdiction as the Court of Chancery has or had in England.

or had in England.

Education.—H. K. has a voluntary system largely in the hands of gov. and of missionary bodies. The present system may be said to have started in 1913 when the Education Ordinance, from which the director of education derives his legal powers came into operation. The medium of matruction in schools varies from one category of school to another. In some, Eng. is the sole language: in others, Chinese: and a number of schools have classes in both languages. The grantaded schools mainly use Eng. The military schools cater for the children under the age of eleven of serving officers and over out the stoff is recruited from the and men and the staff is recruited from the Army kducational Corps and the Queen's Army kchoolinistresses. Normally secondary education in Eng. is to a great extent in the hands of gov. and grant-aided schools. Within the urb. area in 1941 there were 649 schools, 529 of which were private schools (i.e. those not in need of, or which do not merit gov. subsidy) 91 subsidied, 9 gov. and 20 grant-aided. Education in H. K. is not free although 10 per cent of the pupils in gov. schools are awarded free places. The univ was lucorporated in 1911 and opened formally in 1912. In 1941 a new science building was opened a few weeks before the outbreak of war. The supreme governing body of the univ, was the Court, with life, er officio and nominated incubers, the and men and the staff is recruited from the er officio and nominated members, the executive committee, and a senate composed of the vice-chancellor, the director of education and the profs. and readers. There were four faculties, medical, engineering, arts and science; and the total number of students was a little over 500. Larly in 1946 the secretary of state for the On the future of the univ. An immediate effect of the fall of the Colony was the grievous damage wrought on the univ.

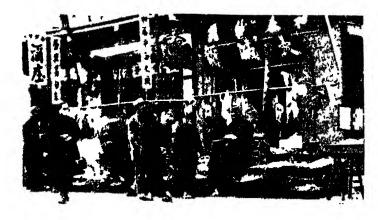
The only Colonies appointed a committee to advise with the advice and consent of which all legislation is enacted and by which all expenditure from public funds has to be approved, is based on that of the lirit, buildings by whole-ale looting. The only buildings of Commons. There are three standing committees of the legislative council—the fluance committee, the law committee and the public works committee—and select committees are from time to time set up to advise on matters before the council. In 1947 the secretary of state for the colonies approved proCommunications.—An electric transway lowed the treaty of Nanking. One of the with 19 m. of track and new motoring roads were opened before the war. Over 400 m. of roads are maintained, 173 m. of freedom of the port and the freedom of which are on the is, of H. K., 106 on Kowloon and the remainder in the New Ters. Chiusse race were preserved in accordance with a policy which ensured for the colony modern metalled construction. The road the role of entrept both for the trade of corrects suffered considerably from register and for the labour of China's S. provs. system suffered considerably from neglect during the Jap. occupation. Two new roads, both in the New Ters., were built during the Jap. occupation: one to the top of Taimoshaa built to serve as a Jap. early warning radar station, whilst the other, leading to Saikung vil., was de-signed to facilitate Jap. military operations against the Chinese guerillas. Kow-loon is the S. terminal of the railway system extending to Hankow. From Shum-chun on the border of the New Ters. N. to Canton the route is now operated by the Canton-Hankow Railway, from Shum-chun S. to Kowloon (a distance representing 36 km. out of a total of 183 km. from Kewloon to Canton) the railway is operated by the H. K. gov. and is known as the Brit. section of the Kowloon-Canton Railway. At the present time, pending the conclusion of a new agreement, the Brit. section is receiving a share amounting to 20 per cent of the receipts and a ter-minal charge of 20 cents per ton on all traffic originating at Kowloon. H. K. is a most important link in the net-work of post-war aviation but to retain its place it requires a first-rate modern aerodrome. A weekly flying-boat service to the United Kingdom was set up by B.O.A.C. united a inguoin was set up by B.O.A.C. in Aug. 1946 (a six-day journey) and the colony is connected by the services of Chinese air transport companies with Shanghai, Nunking, Chungking, Kunning, Hainan Is., and Canton. The colony's only airfield, Kaitak, is to the N.E. of Kowloon, a lifteen min, drive from Kowloon's chief betal. Situated under a steep range of hills rising at one point to 1300 ft. it is an airfield which by modern standards leaves much to be desired. Jap., during their occupation, carried out a considerable extension of this aerodrome, doubling its size at the expense of adjacent Chinese houses and fields and of the former civil sirport buildings; but despite these improvements the aerodrome remained inadequate for heavy aircraft.

History.—Prior to 1841 the is, now known as H. K. was inhabited by a few fishermen, stone-cutters and farmers, and provided a notorious hidne-place for smugglers and pirates. In that year it was occupied by Brit. forces partly as a reprisal for the treatment of Brit. merchants in Canton, and partly to provide a scenre basis for trading with S. China merchants. The cession of the is, to the Brit. Crown was confirmed by the treaty of Nanking in Aug. 1842. The conven-tion of Peking of 1860 added the Kowloon Peninsula and Stonecutters Is. to the Crewn Colony and under a later convention of Peking, concluded in 1898, the area known as the New Ters., including Miss Bay and Deep Bay, was leased to Great Byttain for 99 years. Naarly a century of uniroken peaceful development fol-

the rôle of entrepôt both for the trade of and for the labour of China's S. provs.; afforestation, extensive reclamation of foreshore, cultivation of the lower slopes. and a not-work of motor roads cut into the hills, combined with the steady and natural growth of Victoria itself, to present to the ocean-going ships which lay in the harbour in 1941 a picture very different from that which met the first merchantmen who watered off the S.W. coast of the is. or the first pioneers who explored the hostile hills in quest of pirates; besides which sanitation, anti-malarial work and public health administration combined have removed all evidence of the 'plague spot 'which the new colony was thought The rich interior of to be a century ago. the mainland was linked by railway with the wharves and warehouses of H. K.; schools and a univ. were estab. ; Chinese, European and Amer. air-lines met in the colony's airport; shipvards and docks able to accommodate the world's largest liners were constructed; light industries were started and prospered. Also, if of doubtful benefit to H K., the colony be-came known as an impartial refuge during the internecine strife which ensued in China after the inauguration of the Chinese Republic in 1911 and, later, when China was attacked by Japan. In H. K. the shadow of Jap. aggression was scarcely perceptible when Manchuria was attacked; it darkened somewhat with the tall of Shanghar in 1937 and lay over the colony, heavy and monacing, after the fall of Canton at the chd of 1938. The colony's pop, increased to over one and a quarter million, swelled by homeless retogees from S. China, who could be neither housed nor turned away. In ascertaining, before Japan entered the Second World War, how many persons would have to be fed and sheltered during air raids a census taken in 1941 showed that 709,291 persons were living on the is. ; 581,431 in Kowloon, and 154,000 in boats, giving a total of 1,441.725. There were then just under 8000 Britons exclusive of the garrison. This census showed that so great was the congestion that at least 20,000 people were habitually sleeping in the streets.

When Japan suddenly entered the Second World War on the side of her Axis (q.m.) associates, her forces at once bombed B. K. (Dec. 7). The defences of the is, and of Kowloon had been much strong-thened and these, supplemented by the mentation as nature of the colory, were apparently believed to offer every probability of successful resistance. It is, however, to be borne in mind that under the Washington Treaty of Education of Naval Armamouts, 1922, the contracting parties agreed to meintain the status quein regard to fortifications and naval bases. The Jap. gov. denounced the treaty at the end of 1934 and, in consequence, the treaty lapsed on Dec. 31, 1936. Until the latter date, therefore, the Brit. Gov. were precluded from erecting additional fortifications at H. K. But apart from this, it was always obvious to the anthorities that the position of H. K. would become very precarrous, lying as it does so near to the homeland of Japan, in the event of war with that country. The garrison, added by the Navy, made a desperate against huge odds. By mad-Dec. Kowloon was in Jap. hands and the garrison of that prainsula prepared to with-draw into H. K. is. Jup. land artillery,

commanders. The garrison consisted of Regular and total Volunteer elements, Brit., Indian and Chinese, and a fine contingent of Canadian troops. But air force activity was necessarily restricted nor could Brit. ships operate effectively in such narrow waters. Thus the tiny Canton gunboat, Hobin, was destroyed by ber own crew after fighting to the last moment, while her sister ship, the Cicala, was sunk by bombs and all the small harbons craft were set on tre. Ashore, everything which could be of service to the enous, including wharves, docks, equipment and stores, was wrecked or burned.



u dian lacire

BUOPS IN A HONG KONG STREET

naval forces and bombers were now cease- | in accordance with the scorched earth " lessly bombarding the colons and trying to disrupt the retirement from kowloon by plunging shells into the narrow stretch of water separating Kowloon from II. K. All Brit, troops were also withdrawn from All Brit. troops were also withdrawn from the 300 sq. m of leased ter. on the mainland. Air raids on the is, were not remarkably effective owing to the fact that rocky Victoria peak was honeycombed with first-rate shelters and supplies were protected by the hills. Victoria iteal, built partly in a solid block on the Kowloon leannands on the mainland, partly on recognized land or steen billeids on the is reclaimed land or steep hillside on the is. opposite, was now, together with its naval yard, under enemy are from the mainland; while the less densely inhabited S, side of while the fast definely ininitated S, side of the is, could now use bombarded by long range heavy guas of the Jap, fleet lying near the is, of the S. On Dec. 17 Str Mark Young, governor of H. K., rejected a Jap, proposal to enter into negotiations

jolas, in the closure days of the siege. civilians were remarkably steady under me, but by this time (Dec. 15) the spectre of thirst was haunting the people. the next day the But guns silenced no never than five Jap, batteries, while antiarreaft tire brought down masy Jap. bombers. But on that day the Jap. made bombors. But on that day the Jap. made landings in considerable force and also out telegraphic communications with H K. Later in the day after stiff fighting they gained possession of Victoria City and most of the is. By now the enemy and most of the is. Is now the enemy had more than 20 000 nee on the is, alone and were using their undisputed command of the au to full advantage. The moment Jap thoops landed, small units, armed with fourniv-guns, mortars and grounder produce require for the advance position. and groundes, made for the strong points marked on their detailed maps. Others mean the is, of the S. On Dec. 17 Sir marked on the dealed maps. Others Mark Young, governor of H. K., rejected a Jap. proposal to enter into negotiations of surrender and refused to accept any they appeared to be familiar, began to some further communications from the Jap.

the enemy indulged in their usual indis-criminate bombing before the final as-sault, civilian casualties never exceeded 150 a day. Indeed civilian casualties, both European and Chinese, seem to have both European and Chinese, seem to have been surprisingly light, possibly because no fighting occurred in the teeming cen-tral dists. of Victoria City. Gov. House was badly damaged by bombs. The Military Hospital was hit 29 times. Many fine houses on the Peak were wrecked; but the splendid new building of the H. K. Bank stood up well to shelling The Gloucester Hotel was only slightly of the H. K. Bank stood up well to shelling The Gloucester Hotel was only slightly damaged and the Queen Mary Hospital was neither bombed nor shelled. The gallantry of the garrison was beyond praise and the Indian troops showed magnificent bravery. But the colony was literally rocked from the repeated ex-plecions when the last relentless measures plosions when the last relentless measures were taken before shortage of water com-pelled the defenders to ask for terms. In the interests of humanitarianism the gar-rison was at last forced by the horror of thirst if not of actual want to negotiate a surrender. Among the many examples of courage in the battle for H. K. was the or courage in the battle for H. K. was the heroism of an officer, who, having defended his munition store with great tenacity blew himself up with the store rather than allow it to fall into the enemy's hands. Another gallant episode was an all night fight for the Repulse Bay Hotel on the S. side of the is., during which the defenders, using an old archery set found in one of the rooms, fired flaming arrows into the under rooms, fired flaming arrows into the under-growth where the Jap. were lurking. The garrison of 'Taipans,' consisting mainly of over-age business men, holding the N. Point Power Station, resisted for days, firing rifles from every window at the oncoming enemy. A force of Indians coming enemy. A force of Indians fought a remarkable rearguard action down the entire length of Nathan Road, Kowloon kept their fire up while embarking, and continued to fire as they moved But the odds were always against the defence and while the mainland was being evacuated, the whole 32 sq. m. colony shook from many explosions, including the blowing up of a ferry boat loaded with dynamite, which shattered every window of the is. On the 23rd Canadian troops of the is. On the 23rd Canadian troops suffered and inflicted heavy casualties, their commander, Brig. Lawson and his chief of staff, Col. Hennessy, both being killed. The actual date of surrender was Christmas Day and one Brit. party succeeded in excaping from the is. In speed boats on Christmas night. Thus ended, temporarily, the hundred years of Brit. The colony of H K.

temporarily, the hundred years of Britrule of the colony of H. K.

The colony remained in Jap, hands for some three and a half years. The populicity fell from 1 million to less than half that number. In the face of increasing oppression and brutality the fundamental loyalty to the Allied cause of the Chinese who remained was never in doubt; parts of the New Ters, remained in the hands of Chinese guerillas throughout the war. In spite of the most vigorous punitive

sive organisations had no difficulty in securing the help of every class of Chinese resident in the colony. H. K. was event-ually diberated by units of the Brit. Parific Fleet on Aug. 30, 1945. The Jap. forces were taken prisoner and a military administration was set up under Rear-Adm. Harcourt as commander-in-chief. The military administration lasted until The military auministration issued distinguished by the services and in the previous seven months with the work of reconstruction, a result largely due to the cheerfulness and resilience of the Ohinese pop. Civil gov. was restored on the above date when Sir Mark Young resumed the governorship of the colony and the legislative and executive Councils were reconstituted. In June 1946 the gov. (as in other colonies) set up a committee to consider the relative merits of various schemes for the development and welfare of the colony under the provisions of the Colonial Development and Welfare Act, 1945. War crimes trials during 1946 were set up in H. K. by royal during 1946 were set up in H. K. by royal warrant. Up to the end of that year some fifty Jap. had been tried, nine condemned to douth, nine to imprisonment for ten years or longor, twenty-six to shorter terms and six acquitted; some seventy-eight prisoners were then still awaiting trial. The trials included those of Col. Noma who was head of the Jap. Gendary during the occupation and Col. darmerlo during the occupation and Col. Tokunaga, who was in charge of all prisoner of war camps; while amongst those awating trial were Adm. Sakonio, accused of ordering sixty-nine prisoners of the Brit. motor vessel Behar, sunk in the Indian Ocean, to be butchered on the deck of a Jap. cruiser, and Col. Kogi, the public prosecutor at the 'bloody trials' of 1943 as a result of which forty local residents of H. K. lost their lives.

In anticipation of the fall of Shanghai In anticipation of the fall of Shanghai (May 24-25, 1949) and the implicit threat to H. K. from a further Communist advance southward, the cruiser Januatea arrived on May 29 to strengthen the colony's defences, while a curiew of three months' duration was imposed in the frontier dists. Later Mr. A. V. Alexander, minister of defence, paid a visit to II. K. to impact its defences and, subsequently. the Brit. Gov. sont strong quently, the Brit. Gov. sent strong reinforcements.

reinforcements.

Pop. (estimated, 1917) about 1,750,000, the great majority being of Chinese race. There were in the Colony, excluding Services personnel, about 6000-7000 Brit. subjects from the United Kingdom and the Dominions, 2500 Indians, 870 Portuguese ettizens, 3000 Isrit. subjects of Portuguese race, many of whom had spent the war years in Macao, and also 250 Amers.

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The Birds of Hong Kong, 1946.
Hounton, mrkt. tn. on the Otter, 164 m.
E.N.E. of Exeter by rail, in Devonshre,
England. It is famous for its lace-making. an industry introduced by the Flemish in

Queen Elizabeth's reign. Pop. 600.

Honner, health resort, with a mineral spring, beautifully situated on the Rhine, 8 m. S.E. of Bonn in the Rhineland, Germany. Pop. 8900.

many. Pop. 8900.
Honolulu, city, port, and co. of Hawali,
Pacific Ocean (belonging to U.S.A.), situated on the S. coast of the Control of Oahu. It
is the cap. of Hawali. In 1907 an Act was
passed by which the is, and co. of Oahu,
and the small is, adjacent became the
city and co of H. The chief Industries
to the want of machinery and carriages. are the manuf of machinery and carriages, rice-milling, and shipbuilding. The city, too, has a plentirul water supply, and hence the vegetation is luxuriant. There is a natural harbour which is formed by a lagoon within the coral reef which has 22 ft. of water at the entrance at high tides, and can hold a large number of ships. This and Pearl Harbour (7.v.) are the only safe ports in the archipelago Extensive naval works have been constructed here and military works at Honoluin. From 1820 to 1893 the city was the residence of the sovereign, and is now the seat of gov. and the foreign consuls. It is an or gov. and the foreign consula. It is an entrepht for European and Indian goods, and has communication by steamship with San Francisco, Seattle, Vancouver, Victoria, Sydney, and Chinese and Jap. ports. The univ. of Hawaii is situated at the Chapter has a least to the seattle beautiful to the consultry. ports. The univ. of Hawaii is situated.

H. The city has electric trains. If of city and co. 268,900. See Hawaii.

Honore, see HONAWAR.

Honore, see HUVAWAR.
Honorius (reigned A.D. 381-423), emperor of Rome, b. at Ravenna. Three things notably characterise his reign namely, the inroads of barbarians, the energy of Stilicho, and the pusilianimity of the emperor. Stilicho was appointed He squardlan during his minority, and it was he who quelled the revolt of Gildo in Africa (397) and thrice drove the Gotha Africa (397) and thrice drove the Goths and Huns from Italy. In 400 he defeated daughters of peers. Formerly the style the combined forces of Alaric and Radagalsus; in 402 he defeated Alaric alone at Pollentia, and a year later he put Radagalsus to death near Fœsula. H. executed Stilicho in 408, and so was powerless to repulse Alaric, when he captured Rome a second time in 410. Ataulphus, a right to the distinction.

Alario's son, married Placidia, H.'s sister, but neither he nor H., nor any of the host of usurpers could maintain even a semblance of imperial power. See Gibbon, The Decime and Fall of the Roman Empire, 1766-1788.

Honorius I., pope (625-37), succeeded oniface V. He wrote a letter to Edwin, Honorius I., pope (1920-31), successive Boniface V. He wrote a letter to Edwin, king of Northumbria, urging him to be true to the new faith, and at his request conferred the pallium on the bishops of York and Canterbury. The Celtic Church was a source of continual anxiety to him, as it failed first of all to acknowledge his supremacy, and secondly continued to observe Easter according to a rule for fixing that time that Rome had discarded. ing the time that Rome had discarded, and in its own way. H. also corresponded with Sergius, patriarch of Constantinople, who maintained that the twofold nature of our Lord was animated by a single will.

our Lord was snimated by a single will. If supported this heresy, which was called Monothelism and was anathematised, with the Monothelite heretics, by the Council of Constantinople in 638. See J. Chapman, The Condemnation of Pope Homorius I., 1907.

Honorius II., pope (1124-30), was Cardinal Lambert Scannaberchi, bishop of Ostia, before his election to the papal chair. Besieged by Roger, count of Sicily, in Benevento, H. atterwards countenanced his investiture as duke of Apulla and Calabria. He excommunicated Conrad, Lothair's rival for the throne of Conrad, Lothair's rival for the throne of

Italv.

Honorius III., pope (1216-27), was Car-dinal Cencio Savelli before he succeeded Innocent III. A zealous supporter of St. Dominic, he failed to induce Frederick II. to lead a crusade against the Muslims, and to lead a critisade against the Musilins, and was so unpopular at Rome that he was repeatedly driven beyond that city's gates. See monograph by J Clausen, 1895, and A. Keutner, Papstum und Krieg unter Honorius III, 1935.

Honorius IV., pope (1285-87), was Cardinal Giacomo Savelli. He favoured thules of Anion, and actually problemed

(inal Glacomo Savelli. He favoured (hailes of Anjou, and actually proclaimed his expedition against the men of Aragon a boly war. See M. Prou (ed.), Les Rignstres d'Honorius IV, 1849 Henour, legal description of a seigniory

of two or more manors under the control of one baron and subject to a single juris-

diction. See MANOR. Honour, Maids of, see HOUSEROLD. ROYAL.

Honourable (from Fr. honorable, and Let honorabiles, deserving honour), title of honour prevalent in the United Kingdom and her colomes and also in the United States. In the United Kingdom marquesses should be addressed as 'most II.'; earls, viscounts, barons, and privy councillors as 'right H.'; whilst the title councillors as 'right H.'; whilst the title of IF. is received for maids of honour, judges of the high court, and the sons and daughters of poers. Formerly the style was loosely applied. Major-gen. Lowther, whose father was a merchant, is described on his tomb in Westminster Abbey as 'The Hon.' (1746). In America and the colonies judges and members of state legislatures of the executive councils have

Honourable Artiflery Company (H.A.C.). As a military force this is one of the most auct, in the world, having been granted its Charter by Henry Vill. in 1537. At this time 'artiflery' included every kind of missile, and this company was a Guild of Arthur This Could become a training Archers. This Guild became a training Archers. This Guid became a training school for the London Train Bands, and was always in the foretrout of military training units. Many famous people have served in its ranks at various periods, including the poet Milton, Marlborough. Wren, and the great Fr. engineer Vauban.
The Corps served in the S. African war
1899-1902, and during the First World
War it raised three infantry battalions and seven batteries of artillery, which served in France, Fleuders, Italy, Palestine, and Aden. Its King's Colour is unique, in that it is the only King's Colour in the Brit. Service which bears all the battle bonous, these being usually on the Regimental Colour. The headquarters of the H.A.C. are at Artillery House, Finsbury, London. An Amer. off-shoot of this Company is the present 'Anct. and House he are the company of the Company is the present 'Anct. and Honourable Artillery Company of Boston, Massachusetts, founded in 1683 by four members of the H.A.C. who emigrated. In the Second World Was the 12th (H.A.C.) Regiment, Royal Horse Artillery took part in many battles on the It. front, 1944-45. Set Maj. G. Goold-Walker (ed.). The Honourable Artillery Company in the threat H ar 1914-19, 1930.

Honshiu, see under JAPAN.

Hontheim, Johann Nicholaus von (1701–1790), Ger. Listorian and theologian, eduvas dean of St. Simeon's in Trier, his native place, and from 1738-47 represented the interests of the archbishop-elector at Koblenz. From 1748 he was also uffragan bighop of Trier, and he was also pro-chancellor of the univ. Under the pen-name of Febronias, he discussed the limits of papel authority in what became a famous treatise. His three hists, of Trier are in the highest degree erudite.

Honthorst, Gerard van (1990-1654), Dutch painter, has left many pictures which are now to be found in many gallettes of Europe. B. in Utrolit, he studied under Abraham Bloemaert, studied under Auraham Bioemaert, nigrated to Rome, where he executed his masterpiece 'Christ before ('alaphas,' In Whitehall, as in the Palace of The Hagne, etc., he painted allegorical subjects, and there are still in existence many excellent there are still in extraord, as, for example, the 'Counters of Bedford' in Woburn Abbey ite is noted specially for his night studies.

Hentrop, coal mining vil. of Westphalia, Germany, in the dist, of Arnsberg.

Bloaved (Land-defenders), term first used under the early monerchy of Hun-gary to describe the national champions. During the revolution of 1848 it was used of the patrictic party, and after independence was estab (1868) was applied to the Landwehr. In 1918 it was applied to the

was held in small esteem by his contemporaries. A pupil, perhaps, of Rembrandt, whose style has left an impress on his work, this artist has left a few, but, in their way, exquisite pictures of native interiors. His chan and cheerful course interiors. scenes intimate an earnest appreciation of the joys of domestic life and a warm love for sun and light. See Von Hostede de Groot, Catalogue raisonné 1907; E. Fro-mentiu, Masters of Past Time (trans.), 1910.

Hood, Sir Alexander, see BRIDPORT, VIN-

COUNT.

Hood of Avalen, Arthur William Acland, Baron (1824-1901), Eng. admired, entered the navy in 1836. During the Crimoan war he was with the naval brigade before Seleastopol, and in the China war parti-cipated in the action of Fatshan Creek (1857) and in the scizure of Canton (1858). Director of Naval Ordnance (1869-73), he flually rose to the rank of First Sea Lord of the Admiralty (1885), when his con-servatism proved a formidable obstacle

to crying reforms.

to crying reforms.
Hood, Sir Horace Lambert Alexander (1870-1916), Brit. rear-admiral; b. in London; 3rd son of 4th Viscount II. Calet at age of twelvo. Lieutemant. 1890 on the Trafalgur, 1891-92. Until 1895 studied gumery ashore and performed staff duties. His first experience of mer was under Experience. of war was under Egyptian gov. in gun-boat on Nile, 1897. At Athara and Om-durman. Commander, 1898. Captain, durman. Commander, 1898. Captala, 1903. Shore-fight, Somailland, 1904. Commanded college, Osborne 1910-13. Reuradural, 1913. In command of Dover idellia that secured Eng. Chaunel on outbreak of the First World War. While ably assisting Beatty with a battlacture squadron in Jutland fight, periabed in wreck of his flagship the Javing of the way was regarded by a captaled by a cille, whose magazine was expluded by a Ger. shell, May 30. See J. S. Corbott, History of the Great War, Naval Operations, 1923.

Hood, John Bell (1831-79), Amer. soldier, graduated from the military academy at West Point in 1853. On the declaration of Civil war he joined the Confederates, and after the battle of Gaine's Mill (1861) was promoted to major-gencral. At Gettysburg (1962) he was wounded and after the battle of Chickamanga (1863) lost one of his legs by amputation. Disaster attended him on winning the temporary command of the Tenmovee army, and at the Battle of Nashville his forces were utterly overwhelmed

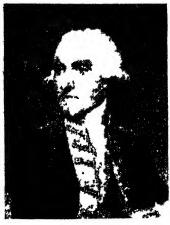
(1865).

(1865).
Hood, Robin, see Robin Hood.
Hood, Samuel, Viscount Hoed of Whiteley (1721-1516). Belt, admiral, sen of a elergyman and brother of Alexander Hood, first Viscount Bridgorf (q.v.), entered the navy in 1741. Frem 1780 to 1753 he was fighting in the West Indies, at first under Rodney, but afterwards as commander-in-chief. In 1781 he made an uneversestil attempt to prevent the Fr. admiral, De Grasse, from blockading whole srny.

Heach, Pieter de (1632-81, or later), thesapeake Hay, and the following year

Dutch painter, b. near Retterdam, workedt is siled likewise, in spite of adroit manat Delft. Like Hobberna and Cuyp, he couvres, to dislodge the Fr., again under

De Grasse, from the is, of St. Christopher The tartics he adopted in extracting him self from this engagement have again and again been commended by naval experts Finally, he assisted at the discounting of his old enemy in the action off Dominic (1783). In 1784 he was returned to Parliament, the unsuccessful candidate being none other than Fox. During the



SANTEL LIBRE VISCOUNT HOOD

Napoleonic wars he succeeded in occupying Corsica (1794) He was received viscount in 1796 and made governue of Greenwich Hospital vis J. H. Hose Greenwith Hospital See J. H. Rose Lard Hood and the Defence of Loudon, 1922

Hoad, Sir Samuel (1762-1911), kng vice admiral, joined the navy in 1776, and from that year till his death was on active service aimost without remission. He took part in the action off Ushant (1775) for the next two years he was flating in the W Indies, and in 1791 effected a branch of the was flating in the W. Indies, and in 1791 effected a branch of the was flating the way flating the way for the rescue of some ships rocked sailors outside the harhour of Jamaica. As commander of the Valous he distinguished himself for his intrepidity and promptitude at the battle of the Mile (1797). In 1842, being promoted to commodore, he almost drove the Fr. out of the West India, and in 1895 seized four Fr. Irigates near Rochefort, but this action unfortunately cost in 1608, he was publicly decorated by the king of Sweden for his brilliant seizure of the Russian gun-ship Senolod. Useful reforms followed his promotion to commander-in chief of the Kast Indies

Tiood, Thomas (1799–1815), King, poet, b. in London of Scottish descent, ultimateto the London Magazine at the age of twenty two, and through this connection it little Second World War, the show ship

he made acquaintance with many of the leading writers of the day He pub Whims and Oddites (1826), and began to publish his Come Annual four years later He was abroad from 1835, but acturned to England in 1840, and in the following year took up the editorship of Colburu's New Monthly Magazine In the year before his death he started Hood's Magazine, and issued Whompiculshes. His works were collected by his sen and dang for (1882-51). Has best known as a humor-191 and as such he occupies a very high place in Eng letters. He was anduly place in Eng letters. He was anduly addicted to the use of the pun, a now disciedited form of wit, but he had a happy way of playing upon words that redeems his jokes from the charge of sillines. I hough prin arily a humorest, he could write in other veins. The Dreum of will in other veins, The Dreum of Fugin trum (1839) is one of his most famous points, second only to the pathetic and be utiful Bidge of subs. The Song of the Shirt, pub anonymously in Punck in 1413 ittracted as much attention to the lot of the worker as Oliver Purst did to the abuses of the workiones system. The Memorials of Thomas Hood, by his daughter, appeared in 1860 and blogithm is by W. Jerrold in 1907 and W. H. Hinkon in 1915 See also W. Jeriold, thomas Hood and Charles Lamb, the story

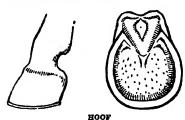
of a friendship, 1930
Hood, part of actionic dress. It is a development of the monk's cowl, and indicates by its colour retterns, and shape, the faculty in which the owner has graduated, the status to which he has attained, and the mire to which be be-



COOR PURDIN

Hood, Mount, extinct volcano, 11,225 ft. high, belonging to the Cascade Range, in the N E. of the Checkamas co. of Oregon, -. A 18 situated of m E of Portland Pines and fire cover its lower slopes. one side is a sheer descent of 7000 ft.

of the Royal Navy. She carried a heavier armament than any other ship in the Fleet with the same speed. Begun in 1916, launched in 1918, and completed in March, 1920. Her displacement was 42,100 tens and her speed was over 30 knots. The original cost was about £6,025,000 but a further £687.674 waspent on repairs and reconstruction when she was taken out of commission in 1929. She was again refitted in 1939. Her outstanding features were the huge area covered by heavy armour, strong framing and the general scheme of protection. Her eight 15-inch guns fired a shell of nearly 2,000 ib., their extreme range being 17 m. In addition there were twelve 5-5 inch guns, as well as lighter armament. The stip was sunk off Greenland by a shell from the new Ger. battleship ment. The slip was sunk of Greenland by a shell from the new Ger. battleship Bismarck at 13 m. range, the shell penetrating a magazine so that she blew up and sank in a few minutes (May 24, 1941). The end of the H. was an almost unbelievable nightmare to the Brit. public and an almost inexplicable disaster in naval hist. Of her complement of over 1300 only 3 were saved. See further under BISMARCK, THE, and NAVAL OPERATIONS IN SECOND WORLD WAR.



Hoofs are horny boxes which protect the sensitive parts of the foot of an animal. The possession of H. is a distinction on which the large order Ungulata is based. They are equivalent to the claws and nails of other mammals, and are renewed from the superior to the inferior border like the human nail. The flexibility of the H. is promoted by a fluid secreted by the kera-togenous (horn-producing) membrane. The so-called cloven H. has been evolved for walking and climbing on irregular surfaces by the formation of separate digits on the foot, each bearing its own distinct H. The horse's H. is too brittle for road wear, and the art of shooing was practised

as early as 333 B.C. Hooit, Pieter Corneliszoon (1581-1647), noted framatist and historian, is, perhaps, after Vondel, the greatest literary genius Holland has to far produced. Born in easy circumstances—his father was for some time burgomaster of Amsterdam—H.

pastoral Granida (1605), his tragedy Geerardt van Velzen (1612), and his monu-mental Nederlandsche Historien 1855-35 (1642-54). See G. Brandt. Leven van P. C. Hooft, 1677; Sir E. Gosse, Northern Studies, 1879; and P. Prinsen, P. C. Hooft, 1922.

Hooge, tn. just E. of Ypres in Flanders. Its situation caused it to be involved in most of the operations around Ypres in the First World War. In May 1915 heavy the First World War. In May 1915 heavy Ger. attacks were launched against the E. and N.E. fronts of the Y pres Salient, and by the 9th the Brit. line had been pushed back to Hooge on the E. Later in the month the Gers. gassed the place and secured a footing in it. During the Ger. offensive of April 1918, H. was again the scene of much fighting, but the Ger main effort was against the S. portion of Ypros more than the E. In the Allied counter-offensive the Ger. positions at H. were overrun by the Brit. (See also France and Flanders, First World War Oam-Paidy-11.) PAIGN4 IV.)

PAID'S IN.)
Hoogszand, tn. in Holland, 18 m. E.S. E. of Groningen. Up to 1650 the dist. in which this tn. is stinated was a waste, but by incresent toil it has been transformed into fertile fields. Pop. 11,000.
Hoogly, or Hooghly, see Hydl.
Hoogstraten, Samuel D. van (1627–1672), Dutch painter, b. at Pordrecht, studied in the school of Rembrandt. Hereme proyect of the min at Pordrecht.

studied in the school of Rembrandt. He became provest of the mint at Pordrecht, 1871. Good examples of his rare works being in Amsterdam and Vienna.

Hook, James Clark (1819–1907), Eng. nainter, studied at the Royal Academy, and in 1846 set out on his foreign tour, as the Academy had awarded him the travelling studentship for his 'Rizpah watching the Dead Sons of Saul' (1846). So far he had mostly chosen romantic or historical subjects, like 'The Finding the Body of Harold' (1846). But after his return from Italy and Paris, he embarked on his spiendid series of Eng. see and land on his spiendid series of Eng. sea and land scapes, among them being: 'A Rest by the Wayside' (1854), 'Luff Boy' (1859), which Ruskin so much admired; and 'Sea Urchins'. See A. J. Hook, Life of J. C. Hook, R.A., 1932.

Hook, Theodore Foundations (1932)

Hook, Theodore Edward (1788-1841), Eng. dramatist, journalist and novelist, b. in London, son of James H., a music-hall composer and composer of *The Lass* of *Richmond Hill*. Educated at Harrow; of lichmond Hill. Education at narrow; but his father, having discovered hisson's precoclous gifts as an author and composer, took him away from school so that he could practise them at home. This occupation was interrupted for a term or constitution of the control of the con two at Oxford, but univ. discipline proved uncongenial and H. returned to London Hooft, Pieter Corneliszoon (181-1647), uncongenial and H. returned to London Dutch dramatist and historian, is, perhaps, after Vondel, the greatest literary genius Holland has so far produced. Born in easy circumstance—his father was for some time burgomaster of Amsterdam—H. spent over three years travelling in Italy and Germany, and after studying law and hist, at Leyden Univ. (1606-09), received a highly remunerative appointment from the prince of Orango. The value of his European culture is manifest in his fine treasurer at Mauritius at a salary of \$3,000. This windfall was H.'s ruin. After five years of brilliant sectal success, he was accused of peculation and sent home under arrest. The attornov-general, however, ruled that there were no grounds for criminal proceedings and H was rulessed He found employment. no ground for criminal proceedings aim.

It was released. He found employment in starting and editing a high Tory weeky paper, John Bull, in which disgraceful attacks, written by himself, were made on Queen Caroline and her Whig adherents. When his identity became known the Whigs were not slow to take vengeance:

To though the neculation in Mauritius for, though the peculation in Mauritius was the work of a subordinate, it was found by a board of enquiry debtor to the Crown for £12,000 through gross neglect Crown for \$12,000 through gross neglect of duty and he was imprisoned for debt from 1822 till 1925. In the last sixteen years of his life, besides journalistic writing, he pub. 38 novels. These attained a popularity second only to Scott's now, unread and well-nigh unreadable, they are of interest only to the literary historian for their considerable influence on the early work of Dickens. Wrote The Schler's Between a coulc opers. 1895. on the early work of Dickens. Wrote The Soldier's Return (a comic opers. 1805), Catch Him who Can (also an opers. 1806). Sayings and Doings (3 series, 1826-29), Maxwell (1830), Jack Brag (1836). He was editor of The New Monthly Magazine from 1836 until bis deuta and had the honour of being satirised by Disraell and Thackeray. Though making a lesso in-Thackeray. Though making a large ininackersy. I long making a large income he was always in difficulties and, after a long struckle with broken health and spirits, he died at Fulham. By the testimony of all who knew him, from Coleridge to Barham, the charm of his conversation was irrestable and unfailing. conversation was irrespectible and unitaling, and his powers of memory and improvisation phenomenal See R. H. Barham, The Life and Remains of Theodore Hook, 1819; M. F. Brighthield, Theodore Hook and his Novels, 1928, and A. Repplier, The Laugh that Failed, 1936.

Hookah (from Arabic hugga) or Nartleb waters to be accounted to poullar in India.

Hookah (from Arabic huqqa) or Nargileh, water tobacco-pipe popular in India, Persia, Turkey, and other countries of the E. The tobacco bowl is connected by a wooden tube with a water vessel so that the smoke is cooled in the liquid before passing through a floxible tube up to the smoker's mouth.

Hooka Repart (1825-1793) Eng. physically a significant of the smoker's mouth.

Hooke, Robert (1635-1703), Eng. physicist, b. at Freshwater, in the tele of Wight, was a pupil of Dr. Busby at Westminster; and at Christ Church, Oxford, worked in the laboratory of Robert Boyle. In 1661 he taught geometry at Gresham Collego, and in 1677, after being surveyor to the City of London, became secretary to the Royal Society. From a paper read before the Royal Society in 1681 it is evident that H. had brought the theory of the telegraph to a much more advanced stage than the Frenchman, Guillaume Amontons (q.r.), and nearly twenty years sooner. Yot although the method of accomplishing telegraphic communication was clearly oxthe laboratory of Robert Boyle. In 1661 graphic communication was clearly explained by H. and its practicality domonstrated by Amontons, it continued to be regarded as of no practical value and was only applied to useful purposes a century later. The range of his invention was

phenomenal. Among his contrivances were a double-barrelled air-pump, the spirit-level, arcometer, marine barometer, the balance-spring of watches, the anchor-escapement of clocks, and a sea-gauge. He was one of the earliest workers with the microscope; his Micrographia (1667) contained the first description of plant contained the first description or plant cells, as well as many other accounts of microscopical anatomy. H.'s Law in physics is named after him. His regretable quarrel with Newton arose out of the fact that he believed, rightly it seems, that he had alroady discovered certain of his rival's principles, especially as to gravity and the laws which rule celestial motions. motions.

Hooker, Sir Joseph Dalton (1817-1911), Eng botanet; b. at Halesworth, Suffolk; son of Prof. Sir W. J. Hooker; took his M D. degree at Glasgow (1839), and as assistant-surgeon accompanied Sir James Ross to the Antarctic in the Erebus. His foreign tours were all fruitful in scientific forcign tours were all fruitful in scientific and especially botanical discoveries, which were fully described in his Flora Interctica (1841-17), Flora of British India (1874), etc. In 1865 he succeeded his father, also an eminent botanist, as director of Kew Gardens. A friend of Darwin, he championed his theories in his presidential address to the Brit. Association, 1868. President of the Boxel Section 1872-77

dress to the Brit. Association, 1868. President of the Royal Society, 1872-77. Other pubs. wero a Himulayan Journal (184) and Genera Plantarum (1862-83). Awarded O.M. in 1907. See monographs by L. Huxley, 1918, and F. Bower, 1919. Hooker, Riohard (1553-41600). Eng. theologian, was, through the patronage of two bishopy, able to take his M.A. degree at Corpus Christi, Oxford, in 1577. For some time he was tutor to George Cranmer. grand-nephow of the archbishop, and mer, grand-nephow of the archbishop, and Edwin Sundys, son of the bishop of Loneavin sanays, son or the bishop of London, and later became master of the Temple, whence his more popular rival. Travers, the Puritan, was eventually expelled. The eight books of the Laws of Ecclesiastical Pulity were composed within the cubet of a country vice see in the quiet of a country vicarage. Five books only were pub, in his lifetime, and considerable my-tery attended the pub. of the last three during the half century following his death. The standard edit, is that of Keble (1836), to which the inlimitable life by I. Walton (1666) is fitly appended. In spite of its quaint and somewhat archaic flavour, H. work, by gension of the statistics and observe the reason of its statelines and charm, its lucidity, even where the thought is most profound, and its noble expression of a lofty intellect and unswerving religious enthusiasm, is justly deemed the fountainhead of modern literature in prose. His head of modern literature in proso. His theory, which he gradually unfolds from book to book, is based first on the unity and omnipotence of law, 'whose seat is the boson of God,' and secondly on the supremacy of calm and temperate reason, to which all things, even divine revelation, are finally reforred. See V. Stanley, Richard Hooker, 1907, and L. S. Thornton, Il Hooker, a Stanley of his Theology. R Hooker, a Study of his Theology, 1921.

Hooker, Thomas (c. 1586–1647), Amer. divine, b. in Martield, Leicestershire, Eng-

Preached in London and Chelmsford (1629); at the latter th. Land, hishop of Lendon, dismissed him for noncon-formity He went to Holland (1630) and formity 416 went to Holland (1630) and in 1631 enigrated with John Cotton and Samuel Stone to Boston, U.S.A., appointed pastor at Newtown (now Cambridge, Massachusetts); and in 1636 he founded Hartford, which he named after tounded Harkford, which he handed after the bp. of his assistant, Samuel Stone, Some of his works include A Surrey of the Sum of Church Duscipline (1614), The Soul's Implantation (1641), The Application of Redemption (1646) See life in C Mather, Mognatius Christic Cimerican, 1702: and M. Tyler, Imerican Laterature, vol. 1 1878 vol 1. 1878

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Hooker, Sir William Jackson (1785–
1865), Eng botanist, pub his Tour in
Joeland (1811). It was written from
memory, as all his notes and drawings
were accidentally burned on his way home. Other of his scientific works were British Jungermannia (1816), Musculegea Britin-ma (1818), in which Dr. Favlor collabor ated, and Flura Scotter (1821) From 1820 he held the chair of botan; in Glasgow Univ , and from 1841 till his death was director of Kew Gardens He collected an invaluable herbarum, and ed three botamoal jours besides numerous treatises on botany S Hooker, 1903. see life by his son, Sir J D

Hooker, Mount, peak of the Rocky Mts., between Brit. Columbia and Alberta, Qanada, S.E. of Mt. Brown, about 52° 27

N. Its altitude is computed at 10,500 ft.
Hook of Holland (Hoek van Holland),
vil. at the mouth of the Nieuwe Waterweg
on a small pennaulu in S. Holland. It is
an important port for passengers and
mail steamers from England.

Hockworm, perastic worm found in warm climates, especially in Egypt, Cey-lon, India and the W. Indies. It often lodges in the bare feet or in cracks in skin human beings, producing 'ground h'; thence, it enters the bloodtioh; thence, it enters the blood-striam, reaching the heart and lungs, and finally the intestines, where its eggs are produced and discharged to begin anew the life sequence. This painful disease is called ankylostomiasis, uncuarissis (q.v.). or ' miner's ansemia.'

Hacle, John (1727–1803), Eng. poet and translator, h. in London. Was a friend of Tamora, N. 19 London. Was a Field of Dr. Johnson, and for forty years was a clerk in the E. India House. He is chiefly remembered as the translator of Tamora, Jerusalem Delivered, Ariosto's Orlando Furuno, and other It. poems; he also wrete as v. translator of the produce of

also wrete sev tragedies. Hoopa, set HUPA.

Hooser, John (c. 1195-1555), Eng. divine, b in Somerset. He was educated at Oxford, but on leaving the univ... and cutered the Benedictine monastery at Glossester, where he was ordaned. He became as adent reference, and after a dispute with therefore had to tee from Empland in 1549 to swold persecution. On ds return he was made hishop of Gloucester in 150, suffering imprisonment for some week. In 1552 he received the bishepric of Worcester in commendum, but n 1553 he was deprived of his office by

Queen Mary, and burnt for hencey at Gloucester. See S Carr (ed.), Writings of Jahn Hamper, 1843-52.
Hooping Cough, see Wittopping Cough. Hoope, bird celebrated in literature, and conspicuous by its plumage and its large erostile crest. The common H. (Tpupa epopa) is about the size of a thrush, with a long, pointed and slightly arched bill. Its hoad and neck are of a golden buff, the former being adorned by the crest which begins to use from the forehead and consists of broad feathers, gradually increasing in length, tipped with black, and having a subtrained bar of vellowish-white. The upper part of the back is of a vinous grey and the flight-feathers and tail are black broadly barred with white. This bird visits Britain during the spring and autumn migration, but seldom breeds in any part of the is. not sendom breeds in any part of the is. Besides the U. epops, there are U. undeed, which frequents India and Cevlon, U. longrostris, common in the Indo-Chinose constries, U. africana, which inhabits S. Africa, and U. murginata, found in Mad gascar.

Hoorn, tn. and seaport, Holland, prov Nicoland, W coast Zurder Zee, 25 m. NNE of Amsterdam It is a picturesque the with most interesting old buildings. There are noted choose and cattle mrkts., heddes shipbuilding and saw-miling yard. Willem "chouten, who doubled Cape Horn and named it after his

milling yard which thousen, who doubled Cape Horn and named it after his bp was b, here Pop. 11,000.

Hoosick Falls, vil of Renselaer co., New York, U 4 A., 24 m N E. of Troy. It manuft, paper making, raping and mowing machines, woollen and cotton goods, and flour. Pop. 1000.

'Hoosier State,' see I voi va. Hoeve, Hoven, or Tympanites, common derangement in runnants due to the accumulation of graces in the runen or first stomach. Is most frequent when animals are allowed to eat immedientally of clover. Before turning for the first time into luxuriant pasture, they should be well fed on dry stuffs. Too much wet grass or frosted turnings or too many potatotes are other causes. The usual treatment is one wineglassful of turpontine in one pint of raw linseed oil. Failing this, the stomach is punt tured with a prothis, the stomach is punctured with a trocar and cannula, or even a pocket knife, to liberate the gas Stoppages due to foreign bodies, or to rupture or stricture, also cause H., and are very rarely cured. Small doses of chloride of lime sometimes give relief.

Hoover, Herbert Clark, thirty-first President of the U.S.A., b. at West Branch, Iowa, 1871. Descended from Andrew H., who was b. at Ellerstadt in the Palaticate who was b. at Ellerstadt in the Palatimate and emigrated to the U.S.A. in 1788, settling in Pennsylvania. H.f.s own father, Jesse Clark H., was the vil, blacksmith of W. Branch. On both sides of his family be is of Quaker ancestry, and himself belongs to that faith. In 1896 he entered upon his carrer as mining engines, became famous in his profession, and made a competence. At the outbreak of the First World War he was in London, in furtherance of the Panama Exposition, and was appointed chairman of the Com-mittee for Relief in Belgium When the USA declared war on Germany, President Wilson summoned H home to be come the food administrator As such H had none of the dictatorial powers with which similar officials were clothed in England and Germany What he had to do was mainly by persussion to induce people to save meat, itour and sugar principally so that the U.S.A might and these things to the Albest President Wilson later made him a member of the West August and the same her of the control and according to the control according to the control and according to the control according to the War Council, and as such he took part at



B chrash

HFRBIRT HOOVER

Paris in the negotiation of the Versailles Treaty Also after the armistice, he was entrusted with the formidable task of directing the Amer Relief Admunistration whose fum tion it was to supply to id and clothing to many of the accely countries of Europe In 1320 Harding appointed H to his cabinet making him secretary of commerce H; held the same post under President Coolidge The Light Hoans nominated him for President in 1928, and the Democrats nominated Gov 1928, and the Democrate nominated covernor Alfred much who was not only a weet in his attitude on the prohibution laws, but also a hom (atholic Phe Protestant dry clements were therefore, bitterly opposed to him H was elected by an almost unprecedented majority of the electoral votes receiving 444 to Smith 8 47 Immense hopes were reposed in him But soon the cloudy began to eather. In the senset Budget. reposed in him But soon the clouds began to gather In the Senate, Radical Republicans united with the Democrats in attacking his policies. The farmets were disaffected on account of the low prices their products were fetching. The Romann particular in Consequence of the control of the Romann and their products were fetching. their products were tetting in the publican parisans in Congress passed a new tariff Bill which was the highest on record, and against which many econom record, and against which many economicate Republican papers, and even manu facturers protested Nevertheless, Haigned the Rull Then came the Stock Exchange (resh of the autumn of 1928, followed by universal depression in

business and nation-wide unemployment. To all these troubles was added acute sufro an these troubles was added soute suf-fering in the farming states in 1939, caused by drought. In the Congressional elections of 1939 H's party suffered thormous reverses. New York state re-clicted the Democrat. I ranklin Roose-velt as governor by the largest majority in the hist of the commonwealth. The Republican majorities in both houses of Congress were wind out. The seventyrepublican majorities in ooth houses were wiped out. The seventy-first Congress ended its existence in bitter tighting with the President. It passes over it is vote, a law giving early payment of houses to soldiers of the First World Way, It is noted about the president. It wrangled with him over measur s for relief for the tarmers and the unemployed The popularity of the President which in the autumn of 1929 was at its cutth now seemed at the opposite and of the sule But in June 1931, by our statesmanlike stroke he temporarily recouped his fortunes. If proposed that all war debt and reparation payments be sit war debt and reparation payments be suspended for one year dating from July 1, 1; 1 But in 1932 he was heavily defeated in the presidential election by Iranklin D Roosvelt and his term of office ended in 1933 In 1946 he was appointed charman of the US Gov's Lamma Integency Committee Pub lications I he Chillenge to Liberty (1934) increase Board (1935) American Front Imerican Road (1938), America's First Crusade (1912), and the Basis of Lasting Pice (1944) See monograph by Wryin, 192) and I Hamill The Strange Career

192) and 1 Hamili Inc Strange Career of Wr Hoose under two Pings 1931

Hope, Queen's Hope, or Estyn, par. and vil on R Alyn, Fintshire, Wales, 7 m.
N N I of Wrexham Pop 3000

Hope, Anthony, we Hawkins, Sir.

Hope Thomas (a 1770-1831) Eng. novelet and antiquerian b in London. A great lover of architecture paintings, an i statues, he formed a fine collection of works of art, and in 190" pub a work on Howehold I urndure which produced a ni assami i urnuure which produced with marked improvement in public teste. He ais write (astume of the Ancients (1800), W lien. Cinhumes (1812). Anadamus (B no il 1819), and an Historical Lessey on it interface (1843).

Hope Diamond, beautiful 44-carat stone of a rire sappline clour which for long wis supposed to bring misfortune to its Its hist began about 300 years ag when it was repited to have been still a form a Burness temple, where it la formed the event an idel. It was solitat Louis XVI an if ours XVI is said to I avenue the diamond to Queen Marie Int ductte Later the hamond turned up In that the Later in mandata birded up a member of the Hot timily to which the duke of Newcasth I longed, and so be the known as the H D It was afterwalls sold to a N w York joweller and wat is sold to a N w bork joweller and after passing through the hands of seven per sile was bought in Paris in 1911 by his livery after the purchase his son was killed, and when him McLean died in 1947, the Russian for opened accordations for the purchase of the diamond.

Hopei, formerly Chill, Child, or Feehill,

prov. of China, in the extreme N.E. bordering on Mongolia on the N., Manchuria and the culf of Pechill on the E. Area ahout 60,000 aq. m. The greater part of the prov. is a fertile alluvial plain, watered by the riva. Potho Hunho Lwanho, Hutcho, and Shangho, and traversed by the Imperial Canal. Millet, maize, wheat cotton, sugar, indigo, tobacco, and fruit are grown. It has many tanning factories. The climate is moderate, but much damage is occavionally caused by floods in the plains and by violent dust storms. There was a severe famine in the prov in in the plains and by violent dist storms. There was a severe famine in the prov in 1842, and it suffered considerably during the Taiping revolt. Paotingfu is the seat of administration. Tientsin and Chinwangtan are treaty ports. There is fair railway communication. In 1914 the part of the prov. It vond the Great Wall was transferred to Inner Mongolia, and Peking and the country round formed into a and the country round formed into a separate dist. Pop. (including many Muslims) 28,529 000; area, 54,140 sq. m The gulf of Pechili is an extension of the Yellow Sea, lying between Korea and the prov. of Shantung, and receiving the waters of the Public. waters of the Pelho.

Hope Islands, cluster in Van Diemen's Gulf, N. Territory, Australia. Hopetoun, Earl of, see LINLITHGOW,

MARQUIS OF.

MARQUIS OF.
Hopetoun, John Hope, fourth Earl of (1765-1823). Brit. general, b. in Linlith-gowshire, served with distinction in the W. Indies Holland, Egypt, and Spain. Also saw service in the Walcheren expedition, and in the Penshaular campaign, where he was wounded and taken prisoner.

Hopetown, div. of Cape Prov., S. Africa.
The tn. of this name near the Orange R is
0 m. S.S.W. of Kimberley. There are
diamond fields and ostrich farms in the
vicinity. The discovery of the Kimberley vicinity. The discovery of the Kimberley diamond mines is traced to the incident of Gramma Stephanus Jacobs picking up the first diamond in the region on his father's farm, De Kalk, near Hopetown, in 1866. Pop. (div.) 6000, (tn.) 2218.

Hopkins, riv. of W. Victoria, Australia.

It rises in the Pyrenees Mts and flows in a

it riess in the lyrenees and and nows in a generally southern direction to the Indian Ocean at Warrnambool. Only about 5 m. are navigable. Length, 110 m.

Hopkins, Essk (1718–1802), Amer. naval officer, b. in Scituate R.I.: appointed by Congress, 1775. First Commander-in-Chief of Amer. navy with title of admirst. He was dismissed for allowof admiral. He was dismissed for allow-

ing the (llasgou to escape.

ing the Hangor to escape.

Hopkins, Sir Frederick Gowland (1861–1947), heramo prof. of blochemistry (1914) in the univ. of Cambridge, and Sir Wm. Dunn prof (1921). For his brilliant work in blochemistry he has received sev. awards, including part of the Nobel prize for medicine in 1929. In 1892, H. devised a reliable and comparatively simple vised a reliable and comparatively simple method, still in general use, for the estimation of uric acid in urine. H. had not been long at Emmanuel College, Cambridge (which made him a supervisor of its medical students), when he made in 1901 the first of his great discoveries: in col-laboration with S. W. Cole he isolated and identified the amino-acid tryptophane.

In 1902 a univ. readership in Chem. Physiology was created for him; and he only gave up his posts at Emmanuel College in 1910 when Trinity College elected lege in 1910 when Trinity Context crowsea thin to a praelectorship in Physiological Chem. with a fellowship. In 1914 a professorship of Blochemistry was created for him, to terminate with his tenure of office; in 1921 he became the first Sir Wm. Dunn Prof. of Blochemistry. The results Dunn Prof. of Biochemistry. The results obtained by H., working first with Fletcher (1905-06) and later with Dixon (1921), revolutionised the conception of the source of muscular energy and exidation of tlesues. The earlier work, howing the formation of lactic acid during nuscular contraction in the absence of oxygen, and the presence of mere traces of this product in the resting muscle and during contrac-tion in the pre-ence of oxygen, led to the abandonment of the theory of storage of intramolecular oxygen. Later, H and Dixon isolated glutathione, a constituent of plant and animal tissues, and showed that other cell products reduced this substance immediately it was oxidised. Glutathione was therefore regarded as the centre of autoxidation in the cell. H. was the first to show that life could not be maintained on protein, fat, and carbohy-drate alone, but that accessory food factors were essential. He thus initiated the research on vitamins and helped to show their importance in bone formation. (See VITAMINS.) In addition to these (See VITAMINA.) In addition to these important contributions to physiology and dietetics, H. discovered and investi-gated the biological rôle of many other compounds including pterins, a chemical group identified with the pigments of butterfly wings, of importance to bio-chemistry. He received the Royal Medal of the Royal Society in 1918 and the Society's Copley Medal in 1926. In 1931 he was elected President of the Royal Society In 1933 be was President of the Brit. Association. Awarded the Baly Medal of the Royal College of Physicians of the Royal College of Physicians in 1915 and in 1921 was Vice President of the Chem. Society. In 1928 he was given the Society of Apothecaries Medal and in 1931 was awarded the Albert Medal of the Society of Arts. ().M. 1935.

Hopkins, Gerard Manley, (1844-1889), Eng. poet and one of the most original of the poets of the second half of the nine-teenth century. Went to Balliol College, Oxford, his tutor being Walter Pater, and entered into the Rom. Catholic Church, but, on the advice of Cardinal Newman, but the Both of the Control of the Second Inc. 1866 he finished his studies at Oxford. In 1866 he joined the Society of Jesus and eleven yours later was ordained priest. Before Before entering on his religious vocation H. decided to eschew poetry, but after seven years, at a hint from a superior, he resumed his muse by writing a com-memorative poem on the Franciscan nuns lost in the wreek of the Deutschland—the iost in the wrek of the Deuschland—the poem being rejected by the Month (1876). If the poem was considered advanced forty years later, it is small wonder that it was rejected. His poot friends, Bridges and Patmore, felt some extrangement from his etvie: but despite the doubts of his friends, he clung to his alliterative metres and his artificial compounds—the 'lovelyasunder starlight,' and the 'silk-sack clouds.' The background to most of his cities and tue in England. Yet he was more concerned with being a prescher than a poet, and his letters show how much his poetry was an overcoming of fatigue. His last poems belong to the few remaining flis last poems belong to the few remaining years of his short life, when he taught Ck. and Lat. in Dublin after his election as a Fellow of the Royal Univ. in 1884. But his health was then declining and his imperfect sympathy with Irish politics added to his unhappiness. He was nearly thirty years dead before his poetry was pub. In 1918 the single vol. that contains it was brought out by his Oxford stand Edward English. But the first oil. friend, Robert Bridges. But the first ed of under one thousand copies took twelve years to sell and whether he will ever be widely read is much to be questioned, though fame has not furled him and he is a poet who should eventually receive his due place in the hierarchy of England's major poets. The poetry of H. in metrical form and imagery, shows the influence of Keats This is evident in the heautiful poem A Vision of the Mermauds (1862). More mature, but not more inspired than this mature, out not more inspired than this remarkable effort of his youth, are Ad Mariam, in the style 'Swinburne' Winder with the Gulf Stram, Line for Preture of St. Dorothea, Maryaret Clifferoe, Wind Lover Heaven-Haven, Pied Beauty, I have descred to go, Felix Randal and the Habit of Perfection—the last six being among his best poems. His name figures in every study of contemporary regres in every sound in community werse as that of a major poot, but noticitle less a poet's poet. An excellent analysis of his poetry is to be found in the chapter. The Craftsman in G. F. Lahey, Gerard Manley Hopkins, 1930. See also R. Beldere, at A. Poetro of Gerard Manley Hopkins. Manley Hopkins, 1930. See also R. Bridges (cd), Poems of Gerard Manley Hopkins, with introduction by C. Williams), 1930. Eleanor Ruggles, Gerard Manley Hopkins, 1947, and W. A. M. Peters, ferard Manley Hopkins a critical Lessy lineards the Understanding of his Poetry 1948.

Hopkins, Harry Lloyd (1890–1946)
Amer. social reformer politician and administrator, b. at Sloux City, Iowa, U.S.A., of comparatively humble parentage. Educated at Grinell College, Iowa While will at college he decided on a social service.

still at college he decided on a social serstall at college he decided on a social structure career and, in 1914, was put at the head of the New York City Board of Child Welfare. Defective eyesight produded military service in the 1914-18 war and he joined the Red Cross, kerving war and he joined the test Cross, thiring it in 1922 to become assistant director of the New York Tuberculosis and Health Association, in which caps ity he attracted the notice of Franklin Roosevelt then Governor of New York State Roosevelt made him acting director of the New York State Roosevelt made him acting director of the New York State Roosevelt made him acting director of the New York State Roosevelt Roos York State Temporary Emergency Roller Administration and, after his election as President, Federal Roher Administrator, in which capacity H. spent 39 m. in rollevin which capacity it. spont so in. in concern a fing unemployment, especially by building in titune. This he dipublic works on a nation-wide scale it philanthropic purpulsas during these years at Washington Bultunore with a public that H., who was in close touch with the White House, became the close friend of wards a free hospital.

Roosevelt. In 1938 the President appointed him Secretary of Commerce and when in 1940, ill health compelled his retirement from the poet, ill had won a wide measure of confidence among business men. By the time of the Democratic Convention of 1940 H had sufficiently recovered to work at the White House, becoming a resident there and a member of the Roosevelt household, Later, as virtual secretary to the Inner War Cabinet. H, became pursonal assistant to the President and his closest confidant. to the President and his closest confident. in Jan 1941, Roseveit sent him to Loudon as his personal emissary and later to Stalin in Moscow. In the same year the president made him head of lend Lease Administration. When the 1 the Lease Administration. When he is a true of the war, I was appointed an adviser on strategy and war supplies and, soon afterwards, chairman of the Munitions Assignment Board Member of the l'acthe War Council, 1942. After 1000-volt's death, H. again went to Moscow as President Truman's envoy and was instrumental in the partial solution of was instrumental in the partial solution of the difficulty on the veto which had arisen at the can francisco Conference (q v). The strain of the Moscow journey, however, on his health prevented him from attending the meeting of the representa-tives of the three major allies in Berlin in July, 1941, and from Nov. he was a patient in the New York Memorial Hos-pital, dving on Jan. 29, 1946. His was truly a remarkable cureer. From an earnest and single-minded social reformer earnest and single-inities social reformer he issume one of the leading adminis-trators of the New Deal (q.v.) and a trusted emissury on diplomatic missions of the highest importance. Despite ill health he accepted in the early stages of the war, the most onerous responsibilities, instilling a confidence in the goodwill and power of his country which was a source of immense inspiration to its alies. In Sept. 191, he received the Amer. Distinguished 193 he received the Amer Distinguished Solvice Medal, the citation speaking of the exceptional ability he had shewn in 'welding our allies to the common purpose of victory over agression.' See R. Sherwood (ed.), The White House Papers of Harry L. Hopkins (vol. 1), 1948.

Hopkins, John (d. 1570), Eng. hymn writer, was part translator with Thomas Strinhold of the famous metrical version of the Papers.

of the Psalms. Of the complete ed. which appeared in 1562 sixty pealing bore the name of H, and forty that of Sternhold. H also contributed some commendatory verses to Fove's Acts and Monuments, and

reves to Fove's Acts and Monuments, and soften credited with the authorship of the Old Hundredth.' He was rector of Great Waldangtield Suffolk (1561-70). Hopkins, Johns (1795-1873), Amer. phaenthropist b. in Anne Arundel co., Marsland. His Quaker parents educated him for a farmer, but at the age of seventicu he went to Baltunote and became a recess. grocer, eventually founding the house of Hopkins & Brothers, and amassing a large fortune. This he devoted to various philanthropic purposes, he presented Baltimore with a public park, founded the Johns Hopkins Univ., and gave money to-

Hopkins, Mark (1802-87), Amer. educa- Calcohism (1777), Essay on IV hitenashtienist, b. at Stockbridge, Massachuseits, ing and Modern Learning (1784). See G. He was appointed prof. of moral philo- E. Hastings, Life and Works of Francis sophy at William College in 1830, become Hopkinson, 1926. sophy at William College in 1830, becoming president of the college in 1836. His pubs. include: Lectures on the Evidences of Christianity (1846), Lectures on Moral Science (1862), Outline Study of Man (1873), Teachings and Counsels (1884), See life by F. Carter, 1892; and the anonymous ed. of Early Letters of Mark Hamkins, 1940.

Hopkins, 1930. Hopkins, Samuel (1721-1803), Amer. theologian, b. at Waterbury, Connecticut. He studied under Jonathan Edwards, and in 1/43 was ordained at Housatonic, now Great Barrington, Mass., where he con-tinued until 1769 when he became minister of Newport, Rhode I. He was an oppo-nent of slavery, and in 1776 pub. Dralogue showing at to be the Duty and Interest of the American States to Enuncipate all their African States. His System of Doctrines contained in Dimne Revet thin, Explained and Defended (1793), sets forth his theological opinions, which differ from ortho-dox ('alviniam in their opposition to the acctrines of original sin and of the Atonement. The pub. of his views was the cause of the famous 'Hopkinskin controversy.' II, is the central flaure in Mrs. Stowe's novel, The Minister's Wooing, (1859). See hite by S. West, W. Walker, Ton New England Leaders, 1901: and B. Dexter, Biographical Sketches of Yale College, 1907.

Hopkins. William (1999)

Hopkins, William (1793-1866), mathematician and geologist, b. at Kingston in Derbyshire. He entered Peterhouse, Cambridge, in 1827, and became seventh wrangler in 1827. He settled at Cambridge as a tutor, and was so successful in his work that he was called 'the senior wrangler maker'; indeed, in 1849 he had nearly 200 wranglers among his pupils, amongst whom may be mentioned such distinguished men as Todhunter, Tait, Fawcett, Stokes, and Clerk-Maxwell. About 1833 he began to study goology, and in 1850 received the Wollaston medal for his researches in the application of mathematics to physics and geology. In 1851 he was elected President of the Geological Society, and in 1853 became President of the Brit. Association. His pubs. include Elements of Irigonometry (1833), and Theoretical Investigations on Motion of (Ilacores (1842).

Hopkinson, Francis (1737-91), Amer. suther, h. in Philadelphia, U.S.A. He was educated at the univ. of Philadelphia, and then studied law. In 1776 he was elected representative of New Jersey in for his researches in the application of

elected representative of New Jersey in the Amer. Congress, and was a signer of the Declaration of Independence. He was appointed judge of the Admiralty in Pennsylvania (1779), and judge of the Dist. Court of the United States. H. was versatile writer and was very popular a versatile writer and was very popular during the revolution, when he wrote his famous ballad Battle of the Keys. Its writings include: The Treaty (1761), An Resaing Hynan, Science (1762) A Camp Ballad, The Typographical Mode of Conducting a Quarret, The Pretty Story (1774), The Prophecy (1776), The Political

Hopkinson, John (1849-98), Eng. electrician, b. at Manchoster and educated at Triuty College, Cambridge, where he caduated as senior wrangler. He then took up electrical engineering, and made many important investigations; in 1890 being awarded a royal medal for researches in electricity and magnetism. He was prof. of electrical engineering at King's College, London, at the time of his death. He pub: Dynamic Electrecity and Original Papers on Dynamic Machinery and Albed Subrets (1893), and other papers on similar themes. He was killed with a son and two daughters ascending the Dent de Veisvi in the Alps.

Hopkinson, Joseph (1770-1842), son of Francis H., b. at Philadelphia and educated at the univ. there. He studied law and practised at Easton and Philadelphia. II, was a member of the national House of being awarded a royal medal for researches

II, was a member of the national House of Representatives from 1815-19, and judge of the Dist. Court of the U.S.A. in 1828; he was also vice-president of the Amer. Philosophical Society and president of the Philadelphia Academy of Fine Arts. Ho pub some of his addresses which he delivered before various societies, but he will be chiefly remembered for his song, Had, Columbia (1798). See life by Fran-cis Wharton, R. Griswold Poets and Paetry of America, 1812; and B. A. Konkle, Joseph Hopkinson, 1931.

Hopkinsville, eity of Kontucky, U.S.A., co seat of Christian co, 71 m. S. of Henderson. It is important principally for its tobacco: it trades also in agric, produce, ive stock, coal, and timber. There are also flour mills. The Bothel Women's College is situated here. Pop. 11,700.

Hopping, John (1758-1810), portrait painter, b in Whitechipel, Loudon. He was admitted as a student to the Royal Academy in 1775, and in 1782 gauget the

Academy in 1775, and in 1782 gained the Academy in 1775, and in 1782 gained the gold medial for an original painting of a scene from King Lear. In 1785 he exhibited portraits of the youngest three princesses, sophia, Amelia, and Mary, and in 1789 was appointed portrait painter to the Prince of Wales. In 1795 he was elected R.A. H. acquired some reputation in his own day, especially for his portrait of women and children. His figures were graceful and rutural and his colours. tion in his own day, especially for his por-traits of women and children. His ignres were grace thi and matural, and his colour-ing brilliant and mellow. Some of his best pactures are the group of 'Lady Cal-ling Smith and Children' (belonging to the duke of Wellington), the time portrait of 'Mrs. La-celles' (the property of Lord Harswood), both of which were exhibited at the Royal Academy, 'The Countess of Oxford' (National Gallery, London', William Putt' and 'Lord Gresnville' (National Portrait Gallery, London', William Putt' and 'Lord Gresnville' (National Portrait Gallery). See W. Vinckay and W. Roberta, Lifegand Paint-ings of J. Hoppner, 1909. Hops (Humulus lupulus), perennial her-baceous plant belonging to the order Can-nabinacee, which has long twaining steams which climb fruely over hedges and bushes. Its leaves are stalked and three to five lobed and very rough to the touch, the

plant being of luxuriant growth and abundant foliage. The male flowers consist of a small five parted perianth enclosing five stamens, and grow in loose all lary panishes. The female flowers are in strobles, or cones, and it is these ripraed cones which are sold under the name of il so that female plants are most generally planted a few male only being necessary to fertilise the female flowers. The H to fertiline the female flowers first mentioned by Pliny as being a garden plant of the Roms who were in the babit of eating the young shoots as we ent asparagus (indeed in Belgrum the young tender tops are even now cut off in spring and used as food the plant being forced from lier to beb for that purpose), and as early as the eighth and ninth centuries H. gardens (humularia) were cultivated in France and Germany for the manuf of beer, but up to the sixteenth century the plant seems only to have been grown in a fifth manner. It was introduced into Emgland from Planders in 1245 but did not become suffice at for the supply of the not necome sunici at for the supply of the kingdom till the end of the seventeenth century. The chief cos concerned with H production in linghand are kent, Here ford, Sussex, Wolcester Hants, and Surrey, and of these kent has always taken the lead, and includes about two thirds of the left sevent of the left lakes. the H acreage of the Brit Isles indeed out of 41' pars in the count 3' have H plantations These are prepared in Oct and Nov the cuttus ploughed dug and manured (for a not soil is required) and the plants put in in rows 6 ft apart Later they are poled and dicesed, the former being due in various wave and at various times—some owners pole the ir plants the first year to produce II in the first season, but is a rule planters nurse their young plants for twelve months as they make very little growth the first year. When the cones are tipe are have become amber coloured and firm, they are picked and conveyed to the oast house to be dried, great care is required to prevent over heating, by which the essential on would be volidised. The cultivation of H is very precarious as the plant suffers from various pests, both insect and fun gold parasites of the former the red spider, Tetramychus telarius, is most de structive in very hot summers, and of the latter the fungus Podusphara costagner does much mischief to the cones See D Skilbock, Hops, 1931 See also Bri wine

Hoquiam, tn., Washington, U.S.A., co seat of Chehalis co., I.S.M. W. of Monte same. It is surrounded by tumber lands It has large lumber and shingle inflie, also plywood and vener plants. It ships lumber, fish, and furs. I arming and dairying are also carried on. I here are shipyards and a fine har hour. Pop. 10,800

Horace, Quintus Horatus Flaccus (62-8 B.C.), Hom poet, b at Venusia in Apulia. He was of servite descent but his father had acquired the status of freedman, and from his profits as anctionaur's collector had been able to purchase a small farm at Venusia. One of the most endearing traits in the character of H. is his reverence for his father. H.'s father recognised the genus of his son and, comparatively

poor though he was, he contrived to give him the best education obtainable by a Roin youth He therefore declined to send the boy to a prov school, and had him educated in Rome at the school of Orbilius, where the sons of knights and senstors were trained. The father himself acted as where the sons of knights and senators were trained. The father himself acted as attendant on the bow accompanying him to whool In H's time many Rom. youths received their univ training at Athens, and theire II repeared about the age of twenty. When Brutus wents to Athens to key forces against Octavian, H embated in his service and was given the raps of military tellura in command. the rank of military tribune in command of a legion. He was on the field at Philippi, and his depicciation of his own valour must be regarded as an imitation of Archilochus and Alcaus, and not as scious information (Odes, II vit. 9; I motte II n 46-30) In the land settlements after the war, H s paternal property at Vennsla was confiscated and he be-Rome Varius and Virgil introduced the coung poet to Mecense, who became his life long patron and friend Ma cenas, n turn introduced him to Augustus, who soon to the glory of Rome and the fame sorn to the giory of Rome and the fame of his protege, chilsted but services to your the ideals of his new empire. From the time it became a court poet, but his genies was strengthened rather than etailed by the guiding influence of his arrent in the year is not Maccines in the year is not Maccines, while throughout the remainder of his the time of the date of the de satisfied his deep scated love of countiv his and scenery I hough towards the cleang years of his life, H was drawn into full timest bosom of the court he never full this former patron. To his fervent. love of Marchae the seventeenth ode of the second book and the cleventh ode of the fourth book bear speaking testmony. Mecenas himself, on his deathbed, thus in nended the poet to the emperor. It rati I lace ut meresto nomor (Suct. m! but H only carvived his patron a few w k. H dued suddenly and without mailing a will, and to Augustus he left the unitie control of his affairs. H 's cardises pul was the first book of the Safara (Bc), followed by a second book c 30 I here follow the chdactic aims and an idea father of the early Salures of I wilms, but they are less personal in attack than the work of the early master. I like the fiere invertie of Juvenal, the it is been written between 41 and 11 BC.

1) are based on the works of Architochus but are sometimes coarse in sentiment and immature in expression. The the watment is mellow, and the workmansip perfect. In subject and style the fer Poetron, a metra il treatme on the act of poetry, is closely allied to the second honk of the Leptstle. This work is somewhat desultory in treatment and capricdons in judgment, its standpoint is un-compromisingly mechanical, vet it throws valuable light on H. s own poetic methods. and the state of literary criticism at Rome.

But H.'s great work was the Odes. These do not stand high on account of any startling originality of thought or depth of feeling, but in finish and technique they those which deal with Rome's expansion and conquests; the love lyrics, although

those which deal with Rome's expansion and conquests; the love lyrks, although charming and graceful, are sometimes in sincere and insipid, and are much inferior to the fiaming lyries of Catulius. The philosophy of H. is eclectic, but, if he inclines to any sect, he is Epicurean and carpe diem is his guiding procept. As a Rom, poet he is generally held to rank second only to Virgil.

Enittons: E. C. Wickham, 1903-04; Odes and Epodes, T. E. Page, 1895; J. Gow, 1906; Salires, A. Palmer, 1896 and J. Gow, 1901-09; Episites, A. S. Wilkins, 1892. Transtations: J. Conington, 1863-70; W. S. Marris, 1912; H. Macnaghten, 1926; H. Builer, 1929, and A. S. Way, 1936; and E. Marsh, 1911 Studies: W. Y. Sellar, Horace and the Elegiac Poets, 1899, J. F. D'Alton, Horace and his Age, 1917; A. Y. Campbell, Horace, a new Interpretation, 1924; T. R. Glover, Horace, 1932; T. Zielinski, Hurace, a new Interpretation, 1924; T. R. Glover, Horace, 1932; T. Zielinski, Hurace, a new Interpretation, 1924; T. R. Glover, Horace, 1932; T. Zielinski, Horace, 1947; also Concordance by L. Cooper, 1916.

Hores (Lat. hora, hour), Ok. mythology, the persontification of the seasons. They are weather-goddesses; the children of

the personification of the seasons. They are weather-goddesses; the children of Zeus and Themis, whose function, it is to regulate the order of nature, superintend agriculture, etc. They are companions of the nymphs and graces, and are represented as goddesses of youthful bloom and grace, typical of the springtime. They are sometimes indicated as being three in number, with parents as above mentioned: but under Alexandrian influence they became the four daughters of Hollos and Selene. See J. H. Krame, Die Musen, Grazien, Horen und Nymphen, 1871.

Horapoilo, or Horus Apollo, Gk. grammarian who taught at Alexandria and Constantinople in the reign of Theodosius. He is often confounded with the Egyptian Horapolic, who lived in the time of Zeno. There is still extant a work by him on

hieroglyphics.

Horatii, three Rom. brothers, chosen by the king, Tullu-Hostilius, to fight against the Curiatii (three Alban brothers) in Longa and Rome. Two of the Roma quickly fell in the combat, but the surviving Horatus was victorious and was led back in triumph to Rome.

Horatius Cocles, Publius, descendant of the survivor of the three Horatii, who, according to tradition, along with Titus Herminius and Spurius Lartius, held the bridge over the Tiber against Lars Por-sens, king of Latium, in 507 B.C. H. sent sens, king of Lathum, in 507 B.C. H. sent back his two companions when the fight was almost finished and defended the bridge single-handed. He then escaped by swimming the Tiber, though enfeebled by wounds, and was overwhelmed with honours by his compatriots. See T. Macaulay, Lays of Ancient Rome, 'Horatius,' 1842. Hordaland, co. of Norway, on the Atlantic coast, with Buskerud and Telemark cos. to the R. Chief tn., Bergen. Area 6.043 sq. m. Pop. 186,900.

Hörde, tn. of Westphalia, Germany, in gov. of Arnsberg, 3 m. S.E. of Portund, tr. which it is now theory protection.

in which it is now incorporated. Pop.

36,000. Hordeolum, see STYE. Hordeolum, see STYE.
Horder of Ashford, Sir Thomas Jeeves
Horder, first Baron (b. 1871), Eng. physician, son of Alfred H., of Wiltehire.
Trained for the medical profession at St.
Bartholomew's Hospital, of which he became assistant-physician. Physician-inordinary to King George VI. Consulting physician to the Royal Orthopædic Hospital; to the Royal N. Hospital; and Honorary Consulting Physician to the Ministry of Pensions. Ex-President, Harveign Society of London: and of the the Ministry of Pensions. Ex-President, Harvelan Society of London; and of the Medical Society of London. Member Executive and Chairman, Advisory Scientific Committee, Brit. Empire Cancar Campaign. Fresident of Fellowship of Medicine. Has written on Clinical Pathology in Practice (1907). Cerebro-Spinal Ferrer (1915), and with A. E. Gow Lesentials of Medical Diagnosis (1928); Health and a Day (1937), Health and Social Weight (1947), The Philosophy of Jesus (with II. Roberts, 1945). He was created a baron in 1933 baron in 1933

Horeb (Arabic, Jebel Musa, Mt. of Moses), mt. in the N. part of Arabia, traditionally known as the sacred mt. of the Heb. law-giving, on the same ridge as Mt. Sinai. The monastery of St. Catherine lies at its foot, in a rayine, and near by is the chapel of St. Elias (Elijah). The rock on H. from which water is said to have issued at Moses' blow is pointed out

by the monks to sightseers.

Horehound (O.E. hurhune, Ger. Anndorn, Fr. marrube), species of perennial herbs, belonging to the family Labiate, growing about I ft. high, with thick stems and a short rootstock. Most of the and a short rousions. Most of the species are herbaceous plants occurring in Europe, N. Africa, and W. Asia. Com-mon or white H. (Marrubium vulgare) is found throughout Europe, and occurs in Britain on sandy or chalky ground, but is not at all common. Black H. (Ballotamgra) a perenmal herb, is also a native of Britain, S. of the Forth and Clyde, and occurs also in Europe and N. Africa. has likewise been naturalised in parts of America; it is used widely as a cough medicine.

Horgen, tn. of Switzerland on Lake Zurich in canton of and 10 m. E.S.E. of Zurich ; amulat vineyards, orchards, and tine walks. Manufs. cotton, ellk, and chems. Pop. 8900.

Horizon (from Ck. opicor, dividing or bounding), circular line round which the earth and sky seem to meet, most clearly defined at wea, where it is called the sea H This is known in astronomy as the sensible H., while the name rational H. is given to the circle whose plane passes through the centre of the earth. The sea H. is de-pressed by a dip which varies according to the height of the observer's eye from the water, this being due to the roundness of

the carth. Astronomy.

Astronomy.

Horley, par. and residential vil. in Surrey, England, 5 m. S.S.E. of Regate, and situated on the R. Mole. It possesses an Early Kng. church (St. Bartholomew). Pop. 6000.

Hormayr, Joseph, Baron von (1782–1848), Ger historian, b. at Innshrück. In 1815 he was appointed historiographer of Austria, and in 1828 became councillor for the foreign dept of Bavaria, holding the nesition of Bavarian minister to Hanthe position of Bavarian minister to Hanthe position of Bavarian minister to hab-over in 1832. He whote widely, among his works being: History of Typol (1817, General Hustory of Modern Times (1817), Vienna, Its History and Currosities (1823), etc. See life by T. von Heigel, 1881. Hormones (Gk. opaau, 1 excite) term applied by E. Starling to those Juices pre-paged by organs, who hass directly into

pared by organs, which pass directly into the blood stream, they are transported to some other parts of the body where to some other parts of the body where they exert a controlling and regulating effect on some vital activity. They are often referred to as the 'chemical mea sengers,' of the body. The most highly complex inter relations appear to exist between the glands, so that the effect of a uctive the giands, so that the effect of a drug on one of them is very far reaching W. Bayliss and E. Starling prepared an extract, secretin, by digesting duodenal mucous membran wan hydrochloric acid. The product is soluble in alcohol, and is not destroyed by holling. If secretin be injected into the blood, it leads to active stimulation of the paureas. This is apparently naturally formed by the action of the pair change on some two action of the acid chyme on some pro-secretin in the intestine. It passes to the pancreas, which it stimulates to produce pancreatic juice. Many Hs besides seeietin are now known, most of them produced in ductiess glands (endocrine or gans) The study of these glands, and of their Hs., forms the important branch of medicine known as endocrinology. We meaning known as endorfinding. We may mention thyroxin, formed in the thyroid gland of the neck; adrenalin, secreted by the adrenal glands near the kidneys, and pituitrin, a mixture of many hormones manufactured by the pituitary gland of the brain. The sex organs (testes or ovarise) are also the site of hormone production as a demonstration. organs (testes or ovaries) are and the site of hormone production, as is demonstrated by the striking consequences of castration. Insulin is the H of the pair rus, see D Paton, Hormone Iherapy, 1922, J Cunningham, Hormones and Herechty 1922; B Harrow, and C. Sherwin, J. Cunnington, Hormones and Herenty 1922: B. Harrow, and C. Sherwin, Chemistry of the Hormones, 1931, G. F. Walker, The Status of Enzymes and Hormones in Therapy, 1935, Hormones, Plant, see Plant Hormones

Hormones, Plant, see CLANT HORMONES Hormuz, or Ormuz, and. city on the Persian Gulf on the N.E. extremity of the is. of Ormuz. It sprang up in the latter part of the Middle Ages, and became a great emporium of the trade between Persia and India. In 1991 the Portuguese captured it and held it till 1622, during which then it served as a great dankt for which time it served as a great depth for the products of India and China. In little more than a century, on the rise of Shah Abbas, its trade was transferred to the new tn. of Bender Abbas. The ruins of

See treatises on Spherical the Portuguese fort still remain at the vil of II.

Horn. A brass wind instrument with the tube bent in a curcular form. In its carly stages it could produce only the natural harmonics and was used mainly for hunting faufares. When composers began to write for it they could use only those notes, usually in the key of F, in which it was pitched as a rule; but after which it was pitched as a rule; but alter the invention of a sories of crooks which could be inserted, the length of the tube could be altered and the instrument placed in a variety of keys. Some extra notes, of rather uncertain quality, could when the could be a soried to the could be a soried to the could notes, of rather uncertain quality, could also be obtained by inserting the hand into the bell. It was only by the introduction of valves about the 1430s that the full chromatic scale could be played on a single instrument. The compass is c. 3½ octaves from (on the Fr. H.) B flat below the stave in the brass clef Also an 8-ft. red organ stop of powerful tone.

Horn (animals), see Hokna. Horn, Cape, generally considered the south rumost point of S. America, at the 5 of a small is to the S of Tierra del Fuego Discovered in 1616 by the Dutch navigators, Lemaire and Schouten, and named after the Dutch tn. Hoorn, the bp. of the latter.

of the latter.

Horn, French, see FRINCH HORN.

Horn, Arvid Bernard, Count (1684–1742), Needish statesman, b at Vuorentaka, Finland. He served in the Swedish army against France and gained rapid promotion, being sent in 1704 as Swedish ambassador to Warsaw, and assisting in the deposition of king Augustus of Poland. In 1705 he became councillor to the new King Stanislans and as bead of the new King Stanislaus, and as head of the party of Bonnets 'practically ruled weden, converting it into a limited mon archy His party remained in power till 1738, when it was ousted by the Hats. I nder his leader-hip the country prosper d, and the years when he was marshal ame to be spoken of as the time of Arvid Horn.' See Gustav Horn, Arvid Bernhard

Hornbeam, or Carpinus betulus, species of Petulacem, found in N. climates and a



HORNBEAM

native of Britain. It greatly resembles the beech in habit, but its leaves are rough and ein like The timber is extremely rough, but is not very often used. In April it bears male and female catking, and the latter precede a number of one-seeded nuts with a three-lobed wing on one side.



HORNBILL

Hornbill, name given to the many species of cora nform brids belonging to the family Bucerotide. They are of considerable size, and derive their name from their immense dentated downward-curved beak, with the horn-like easque at the base. The species range from Africa, India, to the Malavan region, and are remark the for their slow and heavy flight, which, however, is counter-balanced by the pneumatic nature of their bones. The members of Bucarus are omnivorous and feed chiefly on the ground, their food consisting of roots, insects tortoises, etc. During breeding the female is imprisoned by the male in the hollow of a tree which he plasters up, leaving only a small shit for the admission of food B. abysanics is the best known species, other genera being Rhinoplax, Aceros, Lophoverus, and Anorhinus

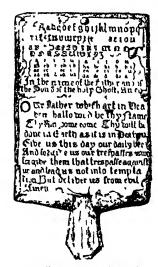
Hornblende, commonest member of the

Hornblende, commonest member of the amphibole group of rock-forming minerals. It is of all colours, but the name is generally restricted to the black or very dark green vareties. It is similar to augite, from which it can only be distinguished by its cleavage angle (q.z.). The monoclinic crystals are prismatic in habit with a six-sided (ross-section; the augle between the prism faces, parallel to which there are perfect cleavates, is 55° 49′ In metamorphic rocks it generally forms irregular messes without definite crystalline form. The dichrolem is always marked. H. occurs as an essential constitution of many kinds of igneous rocks, and many crystalline schists are almost entirely formed of it.

Horablende Schles, mineral commonly, associated with gneiss and, has frequently, with mice schizt. It follows the contortions of gneiss and is traversed like it by granitic veius.

Horabook, primer, formerly used by children in England to learn the elements of reading, prior to the days of printing. It consisted of a piece of paper or parchment on a tablet of wood, with a slice of transparent born in front, hence the mamo. It contained the alphabet, large and small, the Lord's Prayer, and the Rom numerals, and was prefaced with figures of the Cross. There was a handle attached to it By means of a hole bored for a string, the book could be fastiened to the scholar's girdle. At one time H, were quite common but they have now become very scarce.

Hombostel, Erich von (1877-1935), Austrian musicologist, h at Vienna Studied physics and philosophy at Vienna and Heidelberg, and in 1906 became head of the gramophone archives in Vienna for the recording of the music of primitive peoples, on which he wrote sev learned work. In 1923 he went to Berlin in 1933 to New York and the following year to London and Cambridge.



A SEVENIEENTH-CENTURY HORNBOOK

Horneastle, mrkt. tn. of Lingelnshire, England, 130 m N. of Londow. The church of St. Mary is, in pert, Early Eng., and Queen Elizabeth's Grammar School dates from 15t2. The great barec fair, described by George Borrow in Romany hip, is still held annually in the second week of Aug., but has lost much of its importance. The chief industries are

brewing and matting Pop 3600. Se J C. Walter, History of Horncastle, 1903 See Hernohurch, vil and par in Essex, England, 2 m SE of Romford 1t has

manufs of agric implements, cycles, tales and bricks, and there are iron foundre-There is an RAF aerodrome. Pop

81,400 Horne, Lord (1861-Henry Sinclair, 1929), But general b in Carthness cated at Harrow and Woolwich Began his military career in the Royal Artillets ta 1850 served in the S African war (1889 1902) with distinction Saved throughout the 1 irst World War (1914-1913), being mentioned repeatedly in des Mons and the first buttle of the Marn (1J11) he was promoted to the rank of major general Later he was appointed to the command of an army corps and after the battles of the Somme he received a knighthood (Oct 1916) In the horse a knighthood (Oct 1916). In the force fighting at Viny Ridge and the battle of Arius (1917) he gained further distinction and was placed in command of the 1st Army. In the Arias area his army took nearly 20 000 prisoners and 200 gains (Aug. 26 Sept. 3). In conjunction with the 3rd and 4th annus his termy group won the three great buttles of Cambrai St. Quentin (Oct. 1917). If (Oct. 175–23), and Munitum (Nov. 1911). 1018 st Quentin (lot * ' R (lot 17-2)), and Mubeuge (Nov 1 11), 1918
After the Wir he received a pail grant and a barony

Horne, Richard Henry, or Hengist (1803 34) lig author b in I ondon lie became a mulal it man in the Mexicannay. and served in the war against Spain. His literary career began in 1929, when he contributed a poem Head impyles to the the was a talented and versa Athenceum take writer but is chiefly known by his epe poem Orion which appeared in 184? was a correspondent of Mass Barrett (after wards Mrs. Browning) from 1839 to 1839

Horne Tooke, John, we looks

Horned Screamer, popular name of Palamedea cernula, a species of anscritoin birds belonging to the family Palame America and has glossy black plumage with a white abdonen the most remark. able feature is the long slender, Jellowish

able Rature is the role at near, selection the head

Horned Toad popular name given to the species of Ceriliphrys, a genus of amphibians, belonging to the order Anum and the family Cystignathide. The name is derived from the trangular uptight horny appendage above each eye the bead and mouth are huge, and the general appearance is toad like C cornuta of Brazil is beautifully coloured as also is (

Brazil is beautifully coloured as also is covening, a species found in Uruguay, Paraguay, and N. Argentina
Eformed Viper, popular name of Cerasics cornula, a species of roptiles belonging to the family Viperide. It is found in N. Africa, and is remarkable for the possession of a large spiky scale above each eye.

New Chengrica.

See Cerastks.

Hernell, city of Steuben oo, New York, U.S.A., 70 m. S.E. of Buffalo. It is an agric. centre, and has harge car shops of the Eric Railway. Pop. 15,600.

Hornemann, Friedrick Konrad (1772-c 1801), Ger explorer in Africa, b at Hilde sheim. In 1796 he was engaged by the African Association in London as an explorer, and in 1797-98 penetrated from (airo through Fezzan to Muzzal, whence he returned across the Libyan Desert to Iripoli From Tripoli be forwarded his jours to London, where they were pub as Trairle from Cairo to Mourrouk (1802) I rom Impoli he returned to Murzuk with the intention of penetrating to the Hausa country, but nothing further is known of

Hornet, or Vespa crobro, hymenopterous in cet belonguez to the sub order Petiolata wil the family vospide It is the largest of all Brit wasps, measuring about 1 in in length and is not found \ of the Mid lands the predominat colour is red, with some vellow on head, abd men and wings The colonics include not more than 200 individual, and nest in hillow trees or other sheltered places. The H is com-

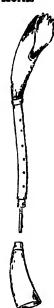
m nall over kniope Horn-fly, see under Dieri RA

Hornman, Anne Elizabeth Fredericka (196 19.7), I ng theatiteal (reducer b a Forest Hill, London, and educated (11) tely and at the plade school Was a protect in modern dramatic production is it is a the dramatic word being in 1811 at the Avenue Theatre London i it he will be chiefly temembered for her worl in founding the Abber The itre Duh in and in the reorganisation of the Conctv In and in the florganisation of the centre theater. Manchester (opened under her a imagement in 1908) she was the prent of the reperior movement in the theater. The parallel movement in the tout of states is the little the state above. and it may be gathered from such An er books as helden Chent 4 Ihe New We sement in the Theatre that the two movement, have been the virk of Gordon (rang and the visit of Miss H a Company in plays by Shaw, Gul-worthy Bennett, and Masefield See P P Howe, the pertory Theatre 1910

Hornman Museum, situated in London
Pond Forest Hill > 1 and is under the
control of the London (o Louncil It is jen free to the public every week-day i id also on Sundays in the afternoon and roung it deals principally with bot inv zoology, and ctinology, and has a hitary which raise pen to the public. Horning, Letters of, term used in zoole inv to signify a writ issued to compel a

in to signify a wr i issued to compel a fultor to pay under the penalty of being a neitered a rebel Originally, these wits were very common and the only means of securing the desired end, but they have now in actually fallen into dissue. Their name was derived from the ractice of making three blacts with a horn to declare the man a rebel if he neg he ted to pay.

Hornpipe, musical instrument originally used in parts of I ngland, made from an animal shorn. The name is now applied to a lively kind or lance which was used to accompany the music and which was, as a general rule, written in common time though this was occasionally departed



HORNPIPE OR PIBCORA

The upper horn is raised to the reverse reed - From a modern reproduction

The best known dances of the kind at the present day is the college H. and the sailor's II.

Horns, weapons that oc-Horns, weapons that occur on the heads of various
animals. They differ in substance; the H. of the deer
are made of bone and are
processes of the frontal
bone, while those of the
graffe are bony prominences covered with hair
and are entirely senurate and are entirely separate from the bones of the skull at first, but afterwards join on to them. Those of aheep, exen, and antelopes are developed from the frontal bones of the skull, and are covered by a corium and by a horny sheath; but the prong-horned antelope has II, which consist at their basisof bony processes covered by hairy skin, and are covered by horny sheaths elsewhere. The H. of the rhinoceros alone are made of hora, and this occurs in fibres, growing from the skin like a mass of coarne bristles. H. are weapons of defence, and occur in both male and female animals, except in the case of antolopes, when they are generally confined to the male sex.

Hornsea, seaside tn. the E. Riding of Yorkshire, England, about 15 m. N.E. of Hull. It is now popular on account of its bathing facilities. Pop. 4900.

Hornsey, municipal bor.

and suburb of N. London.

situated in the co. of Middle-ex, 5 m. N.W. of St. Paul's. Pop. (1939), 72,400.

Horn-silver, see CERARGYRITE.

Hornstone, variety of stone which re-sembles flint very closely. It is exceed-ingly brittle and splintery, and is some-times identified with chert, these two be-mg practically undistinguishable from flint. flint.

Hornu, tn. in Belgium, in Hamaut, 6 m. W. of Mons, engaged in coal mining and manufa. of shoddy, machinery, ropes. It has copper-foundries and brewerles. Pop. 10,800

Hornung, Ernest William (1866-1921)

Hornung, Ernest William (1866-1921)

Eng novelst, b. at Middlesbrough: youngest son of John Peter H. Married a youngest son of John Peter H. Married a stater of Conan Loyle. Educated: Uppingham. In Australia, 1881-86 his early work deals chiefly, with that country. Wrote on many themes, but he owed his popularity to The Amaleur Grackman (viz. the elderly-genticumn-cricketer-burglar, Itaffies, 1899), with its sequels; and Stingares (name of a monocled Dundreary-whiskered bushranger, 1905). Though he dealt in 'sensation,' H.'s strie was refined. H.'s style was refined.

Horology, science which deals with the construction of contrivances for telling the It is well to point out in the first time. place that exact measurement of either space or time is impossible, as no distance can be shown as a multiple or sub-multiple of any particular unit, nor can any period of time be said to contain another period or definite number of times. The problem of measuring time, therefore, resolves itself into an attempt to attain a near approximation to the definition of a unit and the nearest possible measure of a given period in terms of that unit. The parti-cular phenomena which have been recog-nived as dividing time into regular periods are those associated with the revolution of are those associated with the revolution of the earth about the sun, and its rotation about its own axis. The recurrence of seasons due to the earth's revolution has given us the conception of the year, and the problem of calendar-making has involved the measurement of the year in terms of the period of the diurnal rotation of the earth. Machines for telling the time are, however, concerned only with latter unit. The rotation of the earth about its avis is uniform, and occupies the same period every day. The period of rotation is measured by observing the successive returns of a 'faxed' star to the meridian. Such a period constitutes the meridian. Such a period constitutes one sudcreal day, and is used only by astronomers. The sidereal day is divided by universal consent into twenty-four hrs., and the day is said to begin at noon For most practical purposes, however, the time between two successive passages of the sun over the meridian is taken as the unit, and the day is divided into twentyfour hrs., commencing at midnight. The solar day 19 not a uniform quantity, owing to variations in the velocity of the sun, and to the inclination of the equator to the plane of the ecliptic. It is, therefore, necessary to imagine the sun moving at an necessary to imagine the sun moving at an average rate every day, thus giving us the measure of a 'mean' solar day. It is possible, therefore, to assign three different times to any given instant: sidereal time, mean solar time, and true, or apparent, solar time. The sidereal day is shorter than the mean solar day by about four min on the average, or, to be more exact, twenty-four hrs. of mean solar time — 24 hrs. 3 min. 50-5554 sec. of sidereal time. The div. of the day into twenty-four hrs. is a roll of the sexagosimal systems. four hrs. is a relic of the sexagosimal system of notation, as also are the div. of the hour into sixty min. and that of the minute into sixty sec.

Early methods of time measurement.—
The div. of the day into recognised periods

is a natural consequence of any attempt at the proper conduct of affairs. The Egyptians used a horoscopus consisting of a tapering paim-branch with a sightslit in the broader end, and provided with a handle from which hung a plummet. With this apparatus the transit of a star over the meridian could be observed, and the hour fixed. Later on, we find the use of the clepsydra (q.c.), or water clock, and the sand clock fairly universal in Greece and Rome and Hellenised and Romanised countries. The waterclock consisted of a

Sun-dials.—The most exact instrument Sun-diam.—I no most exact materials.

Known to the ancts, was the sun-dial.

Mention is made of a sun-dial in Isalah

xxxviii. 8, which would refer to about

700 B.C. The hemisphere of the Chal
dæan Berosus (c. 300 B.C.) was half a

hollow sphere with its rim horizontal, and

a small sphere fixed at the centre. The shadow cast by this object on the inner surface of the hemisphere, traced out a circular arc during the time the sun was above the horizon. The like, adopted the above the horizon. use of the sun-dial from the Babylonians, and mention is made of one placed in Rome in 290 B.c. The science pertaining to the construction was called anomunica the Arabians were chiefly responsible for its development. The essential parts of its development. The escential parts of a sun-dial are the dial itself and the style, a piece of rigid met.! which casts its shadow on the dial. In a dial may be fixed horizontally, vertically, or inclined to the horizon. In the horizontal dual, which is the commonest type, the plane of the style must lie along the meridian which may be found by observing the successive shadows east by a vertical red and cessive shadows of equal length. This gives the direction of the shortest shadow, and consequently indicates twelve o'clock noon on the dial. The other ire, are ob-tained by calculating the angles on either side of the twelve o'clock shadow. It is obvious that sun-dials only tell the time during the day, and then only when the sun casts a distinct shadow. The time. noreover, is true solar time, which has to be corrected by the equation of time to give mean solar time. Portable dials were made and were commonly set in the meridian by the aid of a compass. Ornamental dials formed a feature of many country houses, but the growing perfection of clocks and watches rendered their employment unnecessary after the seventeenth century.

Clocks.—A clock is said to have been constructed by Pope Sylvester VII. in A.D. 996, with weights as motive power. Many of the early church clocks were simply striking instruments, with no dial to show the time. In 1288 a clock supplied with bells was put up 'n Westminster Abbey. bells was put up 'n Westminster Abbey, and many cathedrals posvesed clocks as early as the fourteenth century. The famous clock at Strasburg Cathedral was constructed in its original form between 1352 and 1370. The regulating mechanism of these clocks consisted of a verge escapement with a balance. The pendulum was adapted to clock mechanism in the seventeenth century, and corrections for temp. were introduced by John Har-

vessel of known capacity, whose base was perforated in such a way that the water leaked away slowly, and at a fairly uniform rate. Some instruments were provided with floats pointing to the hrs. inscribed on a vertical scale. The water clock and the sand clock (which was constructed on the same principle) were used to assign a limit to the duration of speeches in courts of justice, a use which has persisted in the form of the hour-glass estab. In certain clurches to this day.

Sun-dials.—The most exact instrument

| Control of the latter also invented the lituminated dial plate. Many modifications of the general structure of clocks have been introduced from time to time. Clocks which do not strike the hrs. are usually differentiated as timepieces; many play chimes or tunes in addition to striking the historian previously adjusting the Time on a separate hour indicator.

| Control of the latter also invented the lituminated dial plate. Many modifications of the general structure of clocks have been introduced from time to time. Clocks which do not strike the hrs. are usually differentiated as timepieces; many play chimes or tunes in addition to striking the historian previously adjusting the control of the general structure of clocks.—All

General construction of clocks.—All clocks made on the usual principles contain their own motive power, which may be a coiled steel spring or a weight suspended by a chain or wire; a train of wheels, by which the motion is communicated to the hands on the dla! a pendulum or other device for regulating the motion of the wheels; an escapement by which the motion of the pendulum is applied to the wheels; there is often a striking mechan-ism. In the case of a clock actuated by a suspended weight, the motion is first of all communicated to a barrel around which the cord holding the weight is coiled. The axis of the barrel and the arbors of the other wheels are socketed in two parallel plates kept at a constant distance by rigid pillars. Having the same axis as the barrel is the great wheel of the clock, which drives the centre pinion on the arbor of the centre wheel. The arbor of the centre wheel is produced through the front plate to the dial and to it is attached the min. hand. The centre wheel engages with the pinion of the second wheel, and the econd wheel with the pinon of the exapement wheel. The pallets of the exapement oscillate on an arbor which loins a lever or crutch at right angles, having at its other end a fork by which the motion of the pendulum is communicated to the economent. In front of the front-plate of the clock the prolonged arbor of the centre wheel is socketed into a spring pressing against a wheel communicating with the min. hand. The contact is sufficient to ensure the proper motion of the mm hand, but is not strong enough to prevent the adjustment of the hands from the front. Engaged with this wheel is another wheel with the same number of teeth, but bearing on its arbor a pinion which engages with the bour-hand wheel, which has twelve times the number of teeth of the pinion, and is concentric with the minute-hand wheel, though it is surmounted on a hollow tube surrounding the arbor of the minute-band wheel.

Pendulum.-The biggest advance in H. is that due to the introduction of the pendulum. The mechanics of a sus-neuded body had been investigated to come extent by Galilieo, but there is some doubt as to the horologist responsible for its adaptation to clock mechanism, though the honour is usually ascribed to the liutch physicist, Christiaan Huygens. In theory, a pendulum consists of a small theory, a pendulum consists of a small heavy mass concentrated at the end of a light string or row which is free to move about a fixed point. When the arc of oscillation is large, the period of the os-cillation depends upon the amplitude of the swing, but this is not so when the arc of escillation is small. The forces acting upon the bob of the pendulum are its weight acting vertically downward, and the tension of the string acting in the direction of the away At a given moment the motion of the bob is along the tangent to the arc, and as this is at right angles to the direction of the string, the tension of the string, the tension of the string cannot be reselved along the



AN FNGLISH CLOCK IN STLVIN CASE C. 1659. BY D. BOUGET

tangent The motions of the bob constitute simple harmonic motion, so that the vibration is isochronous, that is, whatever the amplitude of the vibration the periodic time is the same. This result is of the utmost importance in considering the pendulum as a time regulator. It means that whatever the power of the driving mechanism, whether the pendulum is moving strongly or feebly as long as the same, in clocks, the pendulum is a bob fixed to the er d of a rigid bar; the bar itself has weight, so that the centre of oscillation is somewhat above the centre of ogravity of the host. The great desideration is that the length of the pendulum from point of suspension to centre of oscillation should remain constant.

Compensation.—As metals expand on timeprisation.—As metals expand on increase of temp., the length of a pendulum tends to increase in hot weather, with the result that the period of oscillation is increased and the clock loses. It is, therefore, necessary to make some contrivance so that the centre of gravity and the whole pendulum shall be moved uparalt at the some extent as the expression. wards to the same extent as the expansion due to heat moves it downwards One of the earliest devises for this purpose is demonstrated in Graham a mercarial pendulum. The bob consists of two glass eviliders containing mercury by adjusting the quantity of mercury in the glass voscels, the moving apwards of the centre of gravity of the mercury can be made to compensate for the lowering of the centre of gravity due to the increased length of the rod. Another compensation device is that invented by John Harrison. in 1726, and commonly known as the gridiron pendulum. It consists of a frame-work of metal rods of two different metals, iron and brass being generally used. The tody are so are inged that the steel bars lengthen downwards in expanding, while the brass rods are fixed at the bottom and lengthen upwards By adjusting the lengths of the respective metals in the in-verse ratio of their co efficients of expansion, the expansion upwards can be made to counteract cractly the cypansion downwards An improvement in these methods of compensation has now been affected by the use of 'invar,' an alloy of makel and steel

Escapements -The function of an escapement is to apply an impulse to the pendulum to cause it to vibrate and to lock the escapement wheel until the pendock the escapement wheel until the pendulum to the pendu dulun has completed a vibration In this way the clock mechanism proceeds in 1 rks, one tooth of the eyespement wheel being advanced for each simile wibration of the pendulum. Soon after the introduction of the pendulum, the anchor es-capement was invented by R Hooke It consists of two claw shaped convex pallets mounted on two limbs oscillating about an axis at the junction of the limbs Each pallet is driven in turn into a notch be-tween two teeth and as it is being withdrawn, it receives an impulse from the turning wheel which serves to keep the pendulum oscillating. The pendulum is, therefore, never free, and a recoil is occa-sioned at the end of the vibration. This disadvantage is obviated in the deadheat escapement, in which the serrations of the where point in the opposite direction. advantage of this escapement is that there is no recoil so that it is well adapted for clocks in which great accuracy is required. Mant cacapements are constructed on the remontoire ' system, in which the escapement has a driving power of its own, esp-plied other by separate winding by the clock train, or by allowing the pallets to drop on to the pendulum by the action of gravity.

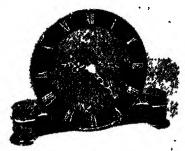
The wheels of a clock are usually made of hard brass and are cut by a whoel-custing machine adapted to the sitch of the wheel. By pitch is meant the number of teeth to each inch of circumference joircomferential pitch) or to each inch of diameter (diametral pitch). Pinions are sometimes made in lautern form, and with specially—haped com give satisfactory re-sults. It is necessary to have come ar rangement in a clock by which the motion of the clock train is not interfered with by or the circum of minings. This is effected by such a contrivance as Harrison's going ratchet. The great wheel has on its face a ratchet wheel with a click set in the clock frame. Upon this ratchet wheel is set another with its teeth pointing in the set another with its teeth pointing it the opposite direction, and its click set upon the larger ratchet wheel. The winding of the clock, therefore, does not cause the revolution of the larger ratchet, as that is prevented by the click set in the clock frame. Striking is effected by a some what complicated mechanism at the front of the clock The essential part is a small wound round the hour wheel. The snall bas a step for each hour, so that a lifting piece is allowed to fall into a position along a rack from which the number of notcheto the end determine the hour to be struck A pin on the min wheel sets the striking mechanism in readiness for going a few min, before the hour. Other additional mechanisms are 'alarm' arrangements tell-tale 'contrivances, etc. The alarm is set by turning an in a stor upon a small dial: the indicator is attached to a wheel set upon the hour-hand wheel by means of a friction spring. A form of watchman's clock is that in which a set of spikes project round the dial in such a way that when a handle is pulled, the spike which happens to be opposite is pulled in. In the morning the spikes pushed in indicate at what hrs. the watchman operated the clock.

The perfecting of the electric clock, first invented by Alexander Bain in 1848, is a recent development. In one type electricity is used to wind the clock by means of a simple direct current motor, operated from a hattery. In others the clock is a simple synchronous motor running in step with the alternators of the power station which supplies the electricity. The frequency of the current generated is constant, being 50 cycles per sec. and (in United Kingdom) is constant for all electricity stations. Clocks are manufactured on a large scale in the United States, particularly in Connecticut and New York. In England the chief centres of the industry are Lendon and Handsworth near Birmingham and there is a recently establicity of the content of the findustry in S. Wales. Many cheap but excellent clocks are made in the Plack Forest region in Germany while the didnatry also flourishes in Switzerland, France

und Iraly.

Until very recently the oscillating quartz crystal was the most accurate stendard of time measurement. If a constant temp, is maintained, the oscillations in a piece of quartz at its natural resonance frequency can be held to a constant of one part in a hundred million. The frequency of the oscillations is reduced until they are capable of driving an electric motor. Atomic physics has now provided a further refinement of accuracy; the new primary standard of time and

frequency is the constant natural frequency of the vibrations of the atoms in the annuonia molecule. The oscillations of the quartz crystal are compared with the amnuonia absorption line, and corrected when necessary, achieving stability against drift. An immediate benefit may result in radio communication, by obtaining the necessity of wide frequency bands.



Smith's Light (locks, Ltd an electric clock, 1950

in clock is finished in without and gift, or padouk an ibronze. It is also manufactured with an 8 day lever movement

Musical Clocks. — Elaborate musical clocks hist made their appearance in England in the early part of the eighteenth century, the name of Charles Clay, official clock-maker to His Majesty's Board of of Works, being most prominent. In 1716 Clay, a Yorkshireman of the W. Riding, petitioned Parliament for a patent in respect of a repeating and musical watch or clock of his invention. A formidable risal, Daniel Quare, ex-master of the Clockmakers' Company, produced a watch alleged to answer the same end as Clay's; but though the atternety general reported in Clay's favour, the opposition of the Clockmakers' Company finally defeated Clay's petition. This set back however did not deter Clay from coming to London, where he eventually acquired so great a reputation as a craftsuan that he could count on the co-operation of eminent artists and musicians in making his clocks. One clock, which Clay exhibited before the Royal Family in 1736, is described (k. J. Britten, Watch and Clock-makers of the World, 1899) as resembling a large table-clock on a rectangular pedestal, being \$\frac{1}{2}\$ ft. high in the arch above the dial are a subsidiary dial showing the age of the moon and the day of the moon had the names of the musical pieces played by the clock. These are (i.) Arrangelo (mell'i Twelfth Comerto, let Adago, 3nd Alleryn, 3nd Saraband, 4th Jigg, and (if.) the Fague in the for view of Arrange, i.e. the second movement of the overture in Handel's opera (inst pub. in 1734). The musical machine consists of a barrel 12 in.

in diameter working on a chime of twentyone belis, and is contained in the pedestal Corelli's concerto is in F major, and Handel's overture in the relative D minor, Handel's overture in the relative D minor, which suggests that the chime was based on an F major scale. Clay's choice of music was of a higher quality and far more elaborate than that supplied by most eighteenth-contury makers, whose repertory is usually confined to the fushionable dances, marches and hymn-tunes of the day. There is a direct relationship between Clay and Handel in this connection for in the index to a vol. of his 'ploces' for a musical clock 'one set is named by Handel Ten Tunes for Clay's musical clock, six being original compositions, and five being arias from Haudel's own operas — For the arias from Haudel's own operas. For the making of his musical clock called The Temple of the Four Grand Monarchies of the World, Clay had the co-operation of Jacopo Aniconi (or Amigoni), the painter, Louis François Roublike, baroque sculptor, John Michael Rysbrack, silver work, Handel, and Geminani, the violin virtuoso. This remarkable clock, which was not completed in C.'s lifetime, subsequently passed into the recoverying of the was not completed in C.'s ineture, subsequently passed into the possession of the Princess Augusta, wife of Frederick, Prince of Wales, and mother of George III. Another typical inusical clock of Clay's is that in the Royal Palace at Naples. The world with the little and the research of the little way. music of this clock was provided by a little pipe-organ, worked by a barrel, but there was no list of tunes. Tradition has it that was no list of times. Tradition has it that this clock was given to Maria Carolina, Nelson's Queen of Naples, by Sir John Aoton, Eng. born Prime Minister of Naples. (See E. Croft Murray, 'The Ingenious Mr. Clay,' Country Life, Dec. 31, 1948.)

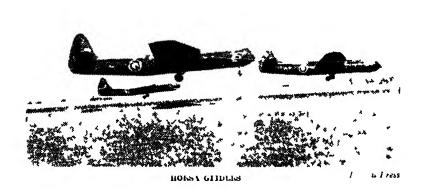
Watches.—Early watches were really ortable clocks. They were driven by a portable clocks. They were driven by a mainspring, and the motion was regulated by a small balance escapement as in the clocks of the same period. Such instru-ments were often too large to be carried in the pocket, and were suspended from the girdle by a chain or cord. Frequently they were globular in form, and gained the name of 'Nireunberg eggs' on that ac-count. Early in the sixteenth century an arrangement called the fusee was adopted. This consists of a mainspring enclosed in a barrel on which is wound a piece of catcut or a chain which is also wound upon a spiral drum in such a manner that when the mainsprings weakens as it relayes, the leverage on the spiral increases, so that the force remains fairly uniform. The the force remains fairly uniform. The form of the watch lent itself to a high degree of ornamentation, and the watches Tudor times are remarkable for the delicacy of the engraving on their cases. Many of them contained a striking mechanism, and when this was dispensed with a decrease in size and weight became possible. Thomas 'Fompion (1639–1713) invented a dead-beat escapement for watches, which was afterwards improved upon by George Graham (1673-1751). The

offered rewards of £10,000, £15,000, and £20,000 for chronometers which would determine long within an error of £0, £0, and 30 geographical m. respectively. In 1761 John Harrison sent his son on a voyage to Jamaica with a watch of his own construction. It lost one min. fifty-four and a half sec. on the double Journey, which was equivalent to a determination of long, within an error of 18 m., according to the terms of the Gov.'s offer. On a subsequent voyage of four months duration to Barbados, one of Harrison's chrono-meters showed an error equivalent to only ten geographical miles. The reward offered was tardily paid by the Gov. who did not sympathise with the principles upon which Harrison constructed his watches. A modern watch possesses a case for containing the mechanism, a mainspring and winding-up mechanism, a balance wheel and hair spring, and an escapement. The mainspring is a thin strip of tempered steel, and in most modern watches tapers very gradually from one end to the other. The fusee is now little end to the other. The fusee is now little used, and inequality in the driving force is compensated for in other ways. The mainspring was formerly wound up by a separate ker, but this is now avoided by connecting the mainspring barrel with the pendant. 1 push button is also provided by which the wheels connected with the pondant can be thrown out of gear with the barrel wheel and connected up with the hand wheels to set the hands when required. The driving power of the main-spring is communicated to the train of wheels as in ordinary clock mechanism. The function of the pendulum in regulat-ing the speed of the train of wheels is taken up by the balance wheel. This consists of a small brass wheel to which is attached the balrapring, a fine appral spring with centro of gravity on the axis of the balance wheel. The elasticity of the spring cames the wheel, when impelled from its normal position in either direction, to return bevond its normal position, and the time of oscillation is the same for different impulses within certain limits The impulse is supplied to the balance wheel by the escapement, which also communicates the rate of oscillation to the train of wheels. The commonest oscapement in Eng. made watches is the lever escapement. This device, invented by Thomas Mudge in the latter part of the eighteenth century, is an adaptation of the dead-best escapement The pallets are fixed applied to clocks. to a lever pivoted at a point midway be-tween the pallets, and furnished with a notch which engages with a small pin on the balance wheel near its axis. The motion is so adjusted that when a tooth of the escape wheel escapes from one of the pallets the pin slips out of the notch and enters it again on the return of the balance wheel, moving the lever sufficiently for the next tooth to escape. The pallets of the lever and the pivots of lever and escape ext great development was the invention wheel are usually lewelled, and undue of the curb-compensation for the hair-spring by John Harrison (1693-1776), who himself constructed chronometers of marvellous efficiency. In 1713 the Brit. Gov. called the 'detached' escapement) provides for one impulse only in a double velocity of light See T. Reld, Treatise on oscillation and the unlocking occurs every Clock and Watch Making, 1849, E. J. other vibration It is too delicate for Wood, Curiosities of Clocks and Watches, use in ordinary portable watches, and is specially adapted for chronometers which are maintained in a horizontal position by gimbals Compensation for changes due to difference of temp is necessary for two reasons. The expansion of the balance wheel increases the moment of inertia of the wheel so that it requires a greater force to turn it in a given direction. The ordinary compensated balance wheel has a circumference consisting of two or more sections cach of which is composed of an inner har of steel melted upon an outer bur of brass, this compound bar carrying a

Wood, Curiosities of Clinks and Walches, 1818, E B Grimthorpe, Rudimentary Frentise on Clocks, It ulches and Rells, 1903 G. F. Gordon, Clockmaking, 1925, II R. Langman and A. Ball, Llectric Horology 1927, 1935 J. D. Robertson, Foulution of Clockwork with a Bibliography of Il mology, 1931 F. W. Britten, Horological Hints and Helps 1934, S. K. Philpott Wodern klectric Clocks, 1945.

Horoscope, term used in the phrase casting the H in astrology (g. n.)

Horrocks, Jersmiah (c. 1617-41), Engastionomics b. at Toxteth Park, Liverpool



small weight The inequality of the expansion of the two metals results in a bending of the bar inwards thus carrying the weight towards the centre of the wheel Such a contrivance requires care ful adjustment Secondary compensa tion is necessary on account of the weaken ing of the elasticity of the hairspring through rise of tup. Apparatus designed to record very small diva of time with great accuracy are called chronoscopes with grain acting and cancer carriaged so as to proserve a more of less permanent record, they are called chronographs $(q \cdot)$ Such mochanisms are often dependent upon the breaking and establishing of electrical contacts and are brought to a block with a furfaction classes. high pitch of perfection Greater and greater degrees of accuracy are constantly being achieved, but it must be remembered that absolute accuracy is not only impossible by the nature of time, but also through the fact that no physical process can be said to be ultimately instantan

After studying at Cambridge he returned to his native place and there began his astronomical observations. In 1639 how ever he was ordained curate at Hook in I ancashire and there made his observation of the transit of Venus Among his writ of the transit of Venus Among his with max are benus in 8 to 1200, printed by Hevelius in 1662 and portions of his writings pub by the Royal Society under the title berema Horractopera Postuma Sec 1 E Balley, Pilatine Volebook, 1882 Horsa, sec Herouse Ard Horsa, Brit troop carrying glider, with a wing span of 85 it and carrying capacity of these tons of fright or fiftigen men

it of three tone of freight or fifteen men with arms and equi ment. The fuselage are of box shape, and a wooden frame nork ensured cast production Large numbers were used in the Normandy invasion, at Arnhem and at the crossing of the Rhine

Horse: History — There is abundant evidence of the exitunce in Cresar's time can be said to be ultimately instantan of Brit or Celtic I miss throughout the eous. For instance, if two clocks are supposed to be exactly synchronous, they are not so when viewed from each other their difference being a function of the difference being a func of Arabian or thoroughbred blood, show no tendency te increase their size. The large H. was probably unknown until the Norman invasion. Then animals of the Andalusian or Chestnut type were introduced, and from these and the large Bel-gian or Flemish H., the war H. ridden by knights in armour and later the modern heavy cart H., were evolved. Although the evidence of the oldest writings, sculptures, and frescues goes to show that Hs. were driven long before they were ridden. the H. was probably employed and bred almost solely for war purposes for a long period. As far back however, as the time of Henry II., the tournament was intro-duced and H. racing first captivated the Eng. people. But wars, of vil and foreign, seriously depleted the H. supply, and in 1495 Henry VII. forbade the export of any H. without royal permission, and of any mare whose value exceeded the 8d. It was Henry VIII. who made H. stealing a During his reign, the weight cap, offence of armour reached its maximum, and in consequence, large and strong Hs. were in beary demand. By this time the value of the H. in agriculture had been realised, and the pack H. was in extensive use for transporting goods. The use of state chariots by noblemen virtually originated the present road system and modern methods of travel. Coaches were introduced in the reign of Queen Elizabeth, and the importation of Arabs and other foreign stock laid the foundations of the modern race H. or Eng. thoroughbred. With the improvement of the roads, and the use of coaches, carriages, and lighter vehicles, great attention was paid to the development of the barness H., and the Hackney or Norfolk Trotter was evolved from a foundation stock of Scandinavian Hs., and the Cleveland Bay and the Yorkshire coach H. were developed.

Brkeps.—The majority of Hs. in use in

Breens.—The majority of the Creat Britain belong to no distinct breed, being of a general utility character, such being of a general utility character, with the development of motor traction, however, the number of such Ha., formerly much used for omnibuses and cabs, has declined rapidly, and the porrentage of pure bred animals has increased. The following are the distinct breefs: the Racehorse, or Thoroughbred, and the Hunter, the Hackney, the Yorkshire Coach H. and Cleveland Bay, the Shire H., the Clydesdale, and the Suffolk Punch; while aroung popies are the Pole pony, the while among points are the Polo pony, the Hackney pony, the Welsh, the New Forest, the Highland, the Shetland, the Dartmoor,

the Exmour, the Fell, and Connemara.
The Thoroughbred is said to have developed an inch in height in every twen y-five years since 1700, and for considerably more than a hundred years has been kept absolutely pure. While it owes much to the Arab all authorities agree that it would not benealt by further intro-duction of Arab blood. The majority of thoroughbreds are bay in colour, and their number appears on the increase. Chest-trut is a fairly frequent colour, blacks and browns are rare, and grey thoroughbreds are practically extinct.

Hunters are bred from at least one thoroughired parent, excellent animals for the purpose being produced by crosses with small Clydeadale or Sunok mares. Irish hunters have long been considered the heat here. A mahoguny-brown colour is preferred, black, bay, or dark chestant coming next in favour. Greys, rosas, and light chestants are not fashionable. A hunter should be thick and strong on the back and loin, with long powerful quarters and numerilar thighs and neatly-shaped and clean books. Size, stamma, action, and reliability at fences are essentials in a good hunter.
The Hockney H. is the beautiful harness

H. of high action, arched neck and fast pace. A Hackney must be over 14 hands high, i.e. exceeding 56 in., but the average high is about 15-3 hands. Hackney-bred carriage Hs. of 17 hands can be obtained. The distinguishing feature of the tained. The distinguishing feature of the breed is its very high and free action. It is a powerfully built, short-legged, big, broad H., with an intelligent head, neat neck, strong level back, powerful loins, tlat-boned legs and good fort.

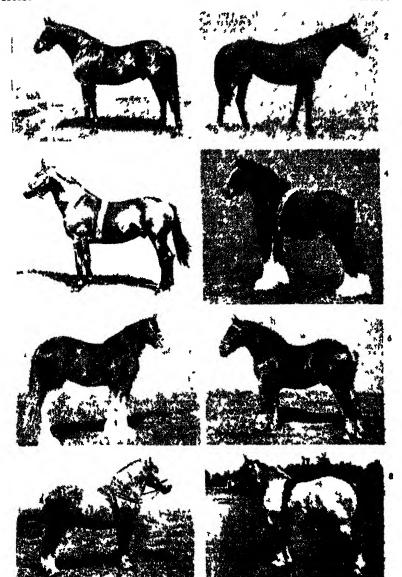
The Cleveland Bay with its offshoot, the Yorkshire Coach H., which tends again to Yorkshire Coach II., which tends again to amalgamate with the parent stock, is the general utility II. There is no better base or foundation for crossing to obtain hunters, cavalry IIs., and harness IIs. The Cleveland Bay is about 16 hands 2 in. in height, bas a short back, powerful toins, and long quarters. Black zebralike stripes above the hock, which occursionally occurs are supposed to denote signally occurs are supposed to denote sionally occur, are supposed to denote special purity of breeding. The colour of the Yorkshire Coach H. is usually dark bay or brown. The mane and tail are black and thick. A fine head, sloping shoulders, strong loins, lengthy quarters, high stepping action, and abundance of bone and muscle characterise the breed which undoubtedly owes something to the Thoroughbred.

The Shire is the largest draught H. in the world, commonly attaining a height of 17 hands, weighing as much as 2000 lb. Though immensely strong, it is very docile and intelligent, and has a good free action. The prevailing colours are black, bay, and The prevailing colours are black, bay, and brown. The short stout legs have a plentiful covering of long hair known as 'feathering,' from the back of the knees and bocks to the parterns. The neck is well arched, chest wide and full, back short and straight, ribs round and deep, and the quarters long, lovel, and well down to muscular thighs. The breed is directly descended from the great way. If directly descended from the great war H.

of medieval times.

The Clydestate is the agric. II. of Scot-nd. It is somewhat smaller than the Shire, but is claimed to be of finer tinish. Bay and brown are the commonest colours. play and frown are the commonest convirs, black and grey coming next, and, more rarely, chestuut and roan. The shoulder is more oblique than in the Shire, but the 'feathering' on the backs of the legs approaches the style of the latter. The broad is remarkably active in work, and is possessed of great strength and enduraure.

The Suffolk Punch is quite distinct from



80ME BRITESH AND FORRIGH BIGHELS

1, Thoroughbred

2, Irish Hunter (Farmer and No. & breeden), 3, Cleveland Bay (Yorkshee Post), 4, Shire, 5, Clydesdale 6, Suffolk Punk i Farmer and Stock-breeden), 7, Pertheson (Sport and General), 8, Brabaucon (Ten Hagen)

the other native draught Hs., and its hind-quarters. It has to carry at top-clean legs, or freedom from 'feathering.' speed weights considered ample for hunt-make it specially well adapted for working ers of 15 hands and upwards. All des-on the land. The Suffolk is always a criptions of native breeds have been drawn on the land. The Suffolk is always a chestnut, varying from light sorrel to dark mahogany. It has long been kept pure, and always breeds true to colour. It averages 16 hands, and sometimes weight as much as 2000 lb. The Suffolk is fumous for its willingness to pull at a dead weight and is an averagingtive. is famous for its willingness to pull at a dead weight, and is an exceedingly active animal. It has a very finely arched neck, low shoulders, thick withers, and a deep round barrel-like build.

Foreign Horses.—The Arab is the most distinguished non-Brit. H. The earliest traces of it go back to the sixth century an and since then the bread has been

A.D., and since then the breed has been A.D., and whe then the bred has been constantly improved by rigorous selection. It has great powers of endurance, fine intelligence, and rare courage, as well as perfect shoulder action and a light mouth. It is the ideal cavalry H., and was in request by the Remount Dept. of every war office in the world until the develop-ment of mechanised warfare. There are ment of mernanised warrare. There are sev. Arab stude in Great Britain. Amongst other foreign breeds are the Percheron, the famous cart-horse breed of France (also bred in England), the Brabancon of Belgium, the Russian Orloff, the Prussian Trakehner, the Jutland, and the Amer. Trotter.

Proter.

Punies.—With the exception of the Shetland, Brit. ponies owe much to Arabian and Thoroughbred blood. The pony breeder's object is to compress the most valuable qualities into the least compass, the aim being an animal with a most based on the second transfer of the compass, the aim being an animal with a small head, perfect shoulders and true action. Yet a pony must not only be a diminutive H.; It must have true pony character. The various breefs range from 14 hands, or even a little bigher, down to 8 hands. The Shetland has been known sometimes to be no more than 26 in. high. Black, bay, and brown are the favourite colours. The Shetlands sure-footedness, intelligence, and good nature make then ideal companions for children. The Highland pony is the for children. The Highland pony is the largest and strongest of native ponies, and is unequalled for hardiness and staying power. The commonent type is the Carpower. The commonest type is the training of the training a stout H, or back). This breed is said to owe some of its features to the Percheron. Allied are the Barra, the Uist, the Rum, and the Skye ponies. The Welsh pony is somewhat the street of the Birthead pony but Skyc ponies. The Welsh pony is somewhat similar to the Highland pony, but is a faster animal; in colour bays and browns are the usual shades. The New Forest pony is most commonly a fiesblitten grey. Its height ranges from 12 2 to 13.2 hands. The Dartmoor and Exmoor are other parfectly hardy breeds.

or in creating the Polo pony, which should measure from 14 hands to 14 hands 2 in.
DIMEASES. Amaurosis, or Glass Eye, is a derangement of the optic nerve. The II. carries its head well up, and steps very high. It is incurable, and its detection is high. It is incurable, and its detection is very important in buying Hs. Authrax (q.v.) is a very contagious disease, and must be at once reported to the police. Astima, Broken Wind, or Heaves, is sometimes due to influenza, bronchitis, or pneumonia, but more frequently to bad food, such as musty hav or corn, or to too much exertion after feeding. Two or three grain doses of arsonic once a day in a mash may give relief. Azoturia occurs when animals are too well fed and have too little overcise. After a little work, the H. sweats profusely and ejects large quantities of blood coloured urine. Bloeding is supposed to give relief. Bog Spavin is a distention of the capsular ligament of the hock joint, and is commonest in cart Hs., especially young Clydosdales. A dressing of green tar and turning out to grass has a good effect. Bone Spavin is a bony enlargement on the lower part of the hock joint brought on by injury or over-exer-tion. Rest, blisters, and firing are recom-mended. Bots are the grube of a gadily. The eggs are laid in summer on the shoulders and forelegs, and are licked off and swallowed. There is no satisfactory remedy, but a H. singeing lamp should be used to destroy the little yellow eggs. Broken Knees are of frequent occurrence. After washing and dressing with antiseptics, cold water bandages are applied. Bronchitis causes great debility. The H. should be placed in a well-ventilated box, the legs bandaged and warm sheets put the legs bandaged and warm sheets put on the body and a pail of cold water con-taining a tablespoon of nitrate of potasi-given it to drink. Calculi are stony accumulations, occurring in the large intestine, and commonest in miliors' Hs. They are often passed naturally, but strong purgatives must be avoided. Canker in the foot is a growth of horn on the sois, produced by injuries or by disty Canker in the foot is a growth of horn on the sole, produced by injuries or by dirty wet litter. The H. must be kept dry and the foot dressed with powdered alum and dried tow. Capped Hock, Knee, or Elbow is a swelling due to a collection of fluid under the skin. Apply hot or cold applications and stimulating lotions. Cataract is a pearly-white appearance of the crystalline lens of the eye, which must be carefully looked for in a possible purthe crystalline lens of the eye, which must be carefully looked for in a possible pur-chase. There is no treatment. Catarrh, or cold in the head, bowels, or bladder is often neglected, but should have prompt attention. Warm clothing, bandaging the legs, a tablespoonful of nitrate of potash, and good varied reeding should restore health. For Collo, or Gripes, two to four ounces of laudanum with two ounces of turnentine in a pint of linseed 13-2 hands. The Darkmoor and Exmoor ponies are other perfectly hardy breeds, of ten neglected, but should have prompt the Fell pony is a native of Cumberland and Westmorland, used by the farmers for all sorts of work. In colour it is usually black, brown, or bay. The Connemars pony, an Irish breed, supposed to be derived from Sp. crosses with native mares, is a big pony, and is much sought after for polo. A pony suitable for polo of Conjunctivitis bathe with tepid water must have powerful riding shoulders, with strength across the loins, and muscular acid lotion. Corns generally occur in the

fore-feet. The shoes should be removed orrespect. The snoes should be removed and a poultice of cold water and bran applied. Crib biting and wind sucking is often a bad habit, though it may be a form of dyspersia. Feeding on the ground, providing a muzzle, or substituting iron for wooden stable fittings may offer to cure. Curb is an epigrament of effect a cure Curb is an enlargement of the back and lower part of the bock joint. the deck and lower part of the local parties. Rest, cold water bandages to reduce the inflammation followed by blistering and firing are beneficial. Diabetes is characterised by the passing of enormous quantities of urine due to bad food and impure water. Rost, good food, dram doses of lodine in a ball, and twenty five drops of hydrochloric acid in the drinking drops or hydrochloric acid in the Grinking water are advisable. In Diarrhora small doses of liuseed oil and laudanum will check an attack. Eczema is very contagious. Triat the affected parts with a disinfectant fluid knteritis, or Inflammation of the Rowels, is a fatal disease, the pain being continuous, and death offer occlusing the oracle was the pain being continuous, and death often occurs in five or six hrs. Hypoder-mic injections of morphia and atropine ane the safest treatment. Farcy and trianders are alled forms of a highly dangerous and contegious disease which is compulsorily notifiable to the police. With chronic glanders, a H. may go on working and feeding for month while a ragged un healthy coat and a leaden hue to the healthy coat and a leaden hue to the membrane of the nostril as the only signs, but such an animal may be a general source of infection. All Hs, and ponies have to be incoulated with mallein before being put down into a coal mine (For fuller details on this, see GLANDERS) Founder, or Laminitia, is an inflammation of the feet. Bleeding often gives relief, as also injection under the skin of a solution of coleration. also injection under the skin of a solution of adreualin. Fractures are of six kinds 1, simple; 2, compound, 3, compound comminuted, 4, compleated; 5, green stick; 6, impacted. In the second and third cases treatment is practically useless, and the H is best destroyed. All the bones of the H is body are subject to fracture. They must be put in position and splints and bandages applied Gastritis or Inflammation of the Stomach, usually proves fatal. Four ourses of usually proves fatal. Four ounces of laudanum in a pint of linseed oil will relieve the pain. Injections of sixty to eighty drop does of morphia and atropine are beneficial. Grease is an inflammation of the skin, the hind legs of cart Hs being most subject. Wash with disinfertants, and dust with boracic acid, lodoform, and charcoal. Hernia is a dis placement of the bowel. A bandage should be sewn tightly round the body until the rupture is reduced. Larvngitis needs careful attention, as if acute the H may become a roarer. Mustard mixed with cold water rubbed on the throat generally effects a cure. Steaming the nestrils with eucalyptus oil time or four nostris with enchypter on inite or four times ado has a southing effect. Locking, or Tetanus, is frequently a fatal disease communicable to man. Antistetanus serum injected at the lower portion of the neck has been successful in some cases. Mange is a parasitic disease, the protuberance in the control of the Any parasiticide except those containing

arsenic can be applied, but as the disease may be deep-sected or superficial, treat-usent varies greatly in effectiveness. The distance has been compulsorily notifiable. Nephritis, or inflammation of the kidneys, requires perfect rest, hot clothes, and small doses of linseed oil and laudanum. Pheumonia is much relieved by bleeding, accompanied by a dose of from ten to twenty oz. of lin-eed oil mixed with one or two oz. of spirits of nitre, and ten to ffteen drops of a onite tincture. Roaring a peculiar noise made in the act of inspiration, and is a characteristic of unsoundness. Operations cometimes effect a cure Saddle galls are the result of badls-ntring harnes. They should be washed with antiseptics and dressed with zinc and lead lotion Sidebone, the ossi-fication of one or both of the lateral cartilages at the sides and top of the hoof, is commonest in cart Hs., and is often caused by high-heeled shoes. Hs. with suctione are unsound. An operation, the use of the bar shoe, and blistering may rectore soundness. Strangles is an infor tions disease commonest in youngs and most seen during the spring months.

Abscess a are formed under the law, round harmath the ears. With the throat, and beneath the ears. With good nursing it often passes off mildly. A preventive serum is recommended. Strangles frequently terminates in roaring.

I large vocabulary has attached itself to the breeding and management of Hs. The following is a glossary of terms in more general use: arm, or shoulder, the upper part of a fore-leg from just below the withers, to just above the elbow; bars of the mouth, the spaces between the canne teeth and the grinders; they occur at the angle of the lips and in them the bit is placed; bay, a reddish nut-brown colour with black points; blaze, a stripe of white down a horse's face, calf knee, a knee that bends sideways towards its fellow, kneck-kneed; castors, chestnuts, or creats, horny excrescences on the inside of each leg above the knees and below the of each leg above the knees and below the hocks. Chestnut. reddish-brown lighter than bay, but without black points, and frequently with one or more white stock-ings clicking, or forging, a defect in a H.'s paces when it knocks the feet against one another; cob, a compact short legged ii.; coffin bone, the bone in the centre of the hoof; cotonet, the bony fringe round the top of the hoof; dappled, coat sprinkled with rings or spots of a darker colour; docking, shortening the tall dun, a dull dark brown generally with black extremities and a black line down the back; elbow, the bony projection just below the junction of a H.'s for leg and body 'fetleck, a lock of short half hanging from the back of the fetlock joint--the junction of the pastern and the shink or cannon home, flank, the part of the H.'s side between the ribs and the hip; the first sind of the control of the sind of the ditter, small red or dark spots on a white or grey coat, also used of a H. with spots on a dark ground; forearm, the part of the foredeg between the knee and the junction of the leg with the body, frog, the protuberance in the centre of the

of a hind-leg between the book and the junction of the leg with the body, grey, the colour composed by a mixture of black and white bairs, hand, a measurement of height of four in, hannehes, the fieshy part at the junction of body and hips hock, the backward bending joint on the bind leg, knee, the forward bunding joint of the foreleg mark (infundibulum), the hollow upon the top of a young H s teeth which by gradually wearing down serves which by gradually wearing down screes as an indication of ago, pastrn, the hone joining hoof and fetlock joint plebald the colour which consists of patches of white and black, points, the extremities of the limbs, roan, a red or blue coat closely decked with grey hairs shoulder the upper part of the foreign from its junction with the body to the shoulder joint alewbald, the colour consisting of patches of any two colours except white and black, snip, a small patch of white upon the nose sorrel the colour formed by vellowish or reddish brown bairs—splint bonce small bones running from hock or knee to fet lock star a square white patch upon the forehead stiffs the joint at the junction of the hind leg with the body thigh the upper part of the hind leg white stocking, the white colouring of one or more legs of a dark or brightly (cloured H) withers the highest point of the back just behind the neck See also Arab Barb Farrifra and Hors Racing See Sir W H Flower, The Horse 1891 W H Wanklyn. The Australasian Rachorse 4910, H C Methods in Rechorse 4910, H C Methods in Rechorse 4910, H C Methods in He Horse his Breeding, Care, and Fristment in Health and Disease, 1917, Sir J Mac Radyean, The Andomy of the Horse 1922 k B Loomis, The Evolution of the Herse, 1926 M H Hayes, Stable W Imagement and Exercise, 1928 W Execute Thorough bred and Hunter bred in 1931 A J Lamb Story of the Horse 13. Ministry of Agriculture, Nutes on Hirse Breeding, 1938, Lady Wentworth The Authentic Arab Horse, 1940, N Wat, in The Biol of the Horse, 1940, N Wat, in The Biol of the Horse, 1947 M Intice Hayes, Peternary Nobes for Horse Ouners (first pub 1877), 1948

Horse-chestaut, or I scalus Hippo custums, well known species of Hippo

Horse-chestnut, or I scalus Hippo castunum, well known species of Hippo castanacee, commonly grown in Bistain as an ornamental tree It was introduced to England early in the seventeenth century from N Greece and Albania It has large leaves divided into five or seven long distinct leaflets and the white Bowers timed with yellow or pink, are arranged in tall showy spikes the fruit arranged in tail showy spiked the fruit is a prukly capsule It is not related to the sweet or sp chestnut see (1FG

the sweet or sp chestnut see (1921). Horse Guards, name of a building in Whitehold London, where the offices of the depts under the command r-in-chief of the army (a rank aboushed in 1904) were situated. Also the name of a cavakry regiment (see next article). The Whitehall building was built in the eighteenth century, and though no longer the headquarters of the army it is still used for military purposes. At the rear, through an archway, is the Horseguards Parade, where the Trooping of the Colour takes place on the King's birthday.

Horse Guards, Royal. Raised in 1661 by the earl of Oxford It wore blue clothing, hence its secondary title 'The Blues' It fought at Sedgemoor, the Boyne and Dettingen In 1812 two Boyne and Dettingen in 1812 two squadrons went to the Peninsula, and were present at Vittoria and the subsequent battle. At Waterloo two squadrons formed part of the famous Household Brigade It served again in the 1822 treatment of the sample in the 1822 treatment of the served again. brigade in server again in the Nile campling was employed as Lainchy. During the S African war (1513-1992) it was at the Relicf of Kimbelley and at Paardeberg During the Liest World War it served in Liance and Llinders from Mons to the Sambre (1913) In the Second World War as part of the House hold Cavalry, it served in Syria is an armoure I car unit in N Africa and Italy and in burope is a reconnuissance unit of the Guards arm mired div



HORSI CHESLAUT

Horse Latitudes, belt of culture and light variable winds on the polar edges of the N k and k Trades commonly applied to the ill defined tropical belts of high barometre pressure which encucle the

Horse-mackerel, popular name of Caranr a genus of teleostean tishes belonging to the sub-order Acanthop Horse-mackerel, terrigh and the family thrungides C tracherus the Brit II is common on our coasts where the young are often found in large colonies sholtering under medusee They bave a compressed oblong body covered with small scales

covered with small scales. Horsemanship, see RIDING Horsemanship, see RIDING Horse, Master of the, officer of the Court who has charge of the royal stables and of all the horses of the king. His authority extends to all the people employed in the stables and he has the privilege of using the horses—the servants also desing at his command. In state processions his place is next to the sovereign. The office, which dates from very early times, is tenable during the time that a particular political party is in power, and the M of the H, is appointed by letters patent.

appointed by letters patent.

Horsens, scaport in the prov. of Aarhus, Denmark, situated 25 m. S.W. of Aarhus, on the fjord of H. Pop. 30,000.

Horse-power, unit used to denote the power of steem and other engines. James Watt was the man who worked out the value of 1 H.P. after experiments with value of 1 H.P. after experiments with strong dray horses. In consequence of the exceptional power of the animals em-ployed, Watt's result is in excess of the amount of work an average horse can compass. It represents the amount of work done, or energy expanded, when 33,000 lb. is raised 1 ft. in 1 min., and equals 146 wates. The Fr. chevel-vapeur is equal to 4500 kilogrammetres a min (32,549 ft.-lbs.), or 736 watt, slightly less than the Eng. II.P. The nominal H.P. of an engine is a term which is quite arbitrary, and is rapidly falling into disuse. The formula for obtaining it is D⊿∜S for high-pressure, and

15.6 47 for condensing engines, where D= the diameter of the piston in in., S= the length of the stroke in ft.

The indicated H.P. (I.H.P.) of a re ciprocating engine is given by the formula 2 A P R S

, where A = the area of the 33.000 piston in sq. in., 5 - the 'en,th of the stroke in ft., P = the mean pressure on the piston in lb. per sq. in. (ascertained from the indicator), and R = the number of effective strokes per min., one for each revolution of the crank-shaft if the engine is single-acting, or two if double-acting.
This formula will not apply in the case of steam turbines, as a statement of the I.H.P. supplies the measure of force acting on the cylinder of an engine, but before the power available for doing external work off the crankshaft can be obtained, that required for driving the engine itself, must be subtracted. The result, when this has been done, is known as the actual, effective, or brake H.P. (B.H.P.) of the engine. For high-class condensing engines 80 per cent. of the 1.H.P., as shown by the dynamometer, or 85 per cent, for non condensing curines, may be taken as the B.H.P., or a little more in each case if the turbines are very large. If the turbineare directly coupled to electrical generators, as is often the case on land, the H.P. can be deduced from the electrical output. Similarly, in an electric motor, if the electrical H.P. (E.H.P.), which is found by the formula amps. x volts - 10, and the efficiency of the motor is 36 per cent., 3.6 will be the B H.P. of the motor. The power required to operate machinery can be exactly measured by connecting it to an electric motor, either as single units, or in groups driven from shafting. The H.P. of a boiler is an expression for the pressure and vol. of steam required to supply an engine of the same H.P. It is a question of the grate area and heating surface, or, in other words, the evaporative capacity to produce the required amount of steam. For convenience, hollers are often so classed, their H.P. under given conditions being stated by the manufacturers.

Horse-rading. The qualities of speed and endurance for which the horse has always been notable, irrespective of any conscious or artificial process of selection, would naturally suggest the inference that would naturally suggest the inserence that H. is a sport of some antiquity. Such is indeed the case, for classic writers record systematic H. at the Grecian Olympiasis in 600 a.c., while G. Grote, History of Greece, 1846-36, speaks of races for one-year-old coits. A tolerably full historical account of turf matters up to the middle of the numeteenth century will be found in of the nineteenth century will be found in J. Whyte's History of the British Tusf, 1810, from which it seems that the earliest mention of race-horses (or 'running horses,' as they were called) in Brit, national annuls is not till the ninth century ' runuing when Wm. of Mainesbury (q.e.) that llugh Capet in soliciting the hand of Ethel-witha, King Athelstan's sister, in marriage, sent over a present of Ger. 'ronning-horses.' It was not, however, till the reign of Henry II. that horse-mess began to be frequent. They were generally held at Smithfield, which at that time ally held at Smithfield, which at that time was the prin, horse-mrkt, of England. The first race of which a description exists took place, possibly at Newmarket, between animals owned by Richard II. and the earl of Arundel. But in the public favour tournaments and jousts held the first esteem, and by the Tudor period, H. had coased to be a great public amusement. The sport revived under James I., at which time Garterly in Yorkshire, Croydon, and Enfield Chase more James I., at which time Garrery in Yorkshire, Croydon, and Enfield Chase were the customary places for the best races took place at Newmarket, although James I. built stables there near his pulace. In Lincoln (on Lincoln Heath) ann racing began about 1680.

Generally speaking, it may be said that II. owes its position as pre-eminently the national pastime to the royal favour of the Stuart monarchs, especially Charles II. The earlier Hanoverum munarchs do not appear to have taken so kindly to the national sport; but if during that period II. was not the sport of kings, it certainly became that of the Prince of Waks. Prince George, after-wards George IV., owned race-horses in 174 The memory of the late King Edward VII., especially when Prince of wales, will long be cherished as a patron of H. Epsom, which from the fact of the 'Derby' being habitually run there, is probably the most popular recessories in kingland, does not appear to have been the seen of H. till 1618 (see Popy's Parry). The Derby Stakes were insugarated in 1789, but although that race Wales, will long be cherished as a patron. continues to be regarded as the bine mband of the turf, the number of entrants has at times compared unfavour-ably with that in other less classic races where the stakes have often been pecuniarily much more valuable. The St. Leger sweepstakes were instituted by a Colonal St. Leger in 1776, who lived near Boncaster Tn. Mose. The 'Ladies Race' of the Osks first took place in 1779. Ascot. as a popular H. place can trace its blat. from 1711. But practically all the great

ann. steeplechases, like the Grand National, 1 event. the Liverpool, and the Sandown Park Eclipse, began long after the estab. of the

great classic flat-race meetings.

Some occasional steeple hasing across country is traceable, according to the Badminton Racing book, as far back as 1752, Ireland apparently being the home of its early popularity. The term 'steeplechasing' itself merely denotes the fact that some convenient goal like a neighbouring church steeple was selected event. In 1866, as a result of the efforts of Lord Suffolk, Lord Coventry, the duke of Beaufort, and others in the interests of fair play, the Grand National Hunt Committee was formed as the authoritative governing body over steeplechasing, the Jockey Club refusing to assume control over disputes unconnected with flat-enering The recognised rules and regulations of steeplechasing are to be found in Weatherby's Steeplechase Calendar

The Jockey Club is the governing body as a point in the race for the horses to over all matters appertaining to flat-mark on in their cross-country run over racing. Its first existence is variously



Fus Photos THE SCENE AT THE FINISH OF THE 1947 DERBY, WON BY 'PEARL DIVER'

ditches and hedges. (See also POINT TO POINT STERPLECHASES.) Steeplechasing as a regulated sport is not recorded much eacher than about 1829, when plates were put up for prizes, and restrictions placed on the weights of the miders. The sport became increasingly popular some ten years later, when the first Liverpool steepleshape were steeplechase was run round a two-mile course near Aintree. For the first time the conditions of the race were so regu-lated as not only to secure for the spec-tators an uninterrupted view of the race, but to ensure fair play for all the com-petitors. After this, meetings were in-stituted at St. Albans, Aylesbury, and other places, but the contest originated at

assigned to the years 1750 and 1759. The first express mention of it, according to Dey's book on H, occurs in R. Heber's Racing Calendar for 1758, in connection with a regulation passed in that year directing all ridors to pass the scales when directing all riders to pass the scales when they came in, under pain of dismissal. This, however, would seem to indicate that the club had by that time got into full working order, and the tradition of 1750, as the year of its foundation, is further confirmed by the fact that in 1752 a room on the site of the present club buildings was erected and leased to the duke of Ancaster and the marquis of flatings in trust for fifty years as the place for general meetings of the aristo-Liverpool, especially after the seiling race became superseded by the Grand National market meetings, (See also the Badwhich has continued down to the present minton Racing-book.) The Jockey Club day to be the prin. ann. steeplechasing promulgates the rules of racing and

amends them according to the dictates of | (A scale of Weights for Ages will be found the racing world; it also regularly in Ituf's Guide to the Turf) The scale is appoints stewards and defines their pub under the sanction of the stewards amends them according to the dictates of the racing world; it also regularly appoints stewards and defines their powers. The rules prescribe that the full programme of every meeting must be public the names of two or more persons as stewards, and of the various other racing officials—the judge, cirk of the course, handicapper, stakeholder, clerk of the scales, and starter The clerk of the course is solely responsible to the stewards for all general arrangements. The principle of the clerk of the course is solely responsible to the stewards for all general arrangements. The principle of the clerk of the course is to can say, months before the meeting, for entries for months before the meeting, for entries for the races.

Hurdle racing is also a popular form of co. In the early days of this kind of H the hurdles were customanly about 5 ft. in height and had very tightly in the ground, but the modern builde is not above 4 ft high, and is put so lossely in the ground that a horse failing to char it may easily carry it along with him to his own great danger. The whole art of hurdle racing is to take the hurdles smoothly and easily without a perceptible pause either at making the spring or at the hurdles were customaily about 5 ft.

landing.

The prin. flat rating events in England, and the distances are (1 1) The Derby Stakes (1 m. 4 furlongs), 2000 Cunneas (1 m.), 1000 Gunneas (1 m.), 0aks (1 m.), 6 m. hasot Cup (2 m.), 5t. Loger (1 m.), 6 m. longs, 142 yds.), Lincolnshire Handicap (1 m.), Newmarket Stakes (1 m.), 2 furlongs, 3, 48cot Stakes (2 m.), Roval Hunt Cup (7 furlongs, 166 vds.), Gold Vacc, Ascot (2 m.), C'esarewitch (2 m., 2 furlongs), Coronation Cup (1 m.), Coventry Stakes (5 furlongs), Grand Plix de Paris (1 m. 7 furlongs), Nunthorpe Stakes (5 furlongs), Cheveley Park Stakes (6 furlongs), Cambridgeshire (9 furlongs or 1 m.), Dewhurst Stakes (7 furlongs), Champion The prin. flat racing events in England,

iongs), Cambridgeshire (9 furlongs or 1 m.), Dewhurst Stakes (7 furlongs), Champion Stakes (1 m. 2 furlongs), November Handicap (1 m.), Middle Park Stakes (6 furlongs), Free Handicap (7 furlongs), Goodwood Cup (2 m., 5 furlongs).

The season for flat-racing in England is between March 21 and Nov. 22, or there abouts. The rules provide for two races of 1 m. or upwards—not being selling races—for each day's racing, and that no race shall be run over a less distance than five furlongs. It is not often, however. five furlongs. It is not often, however, that a two-mile course is run, though at Age at the Gold Cup course is 24 m, the Alexandra Stakes is 2 m 0 furlongs 85, 3 ds while the Cesarewatch course is 2 in 2 furlongs. The Deiby course has been shortened 29 yds., owing to the rounding of Tattenham Corner, and is now 1 in 4 furlongs exactly. The Derby and St. of Tattenham Corner, and is now 1 m 4 furlongs exactly. The Derby and 5t Leger are restricted to horses three years old, both illies and colts being eligible, and except that fillies have a sex allowance of 3 lb., all the horses carry the same weight. The Oaks is for fillies only "Weight-for-age" races are open to horses of varying ages, horses of equal age carrying equal weights the younger less than the older. Horses of six years and upwards give weight, according to a present of the property of six years and upwards give weight, according to a present of the property of six years and upwards give weight, according to a present of the property of six years and upwards give weight, according to a present of the property of six years and upwards give weight, according to a present of the property of six years and upwards give weight, according to a present of the property of the pr

of the Jockey Club as a guide to tace-meeting managers, but is not intend d to be imperative. The third kind of race is the handleap, which did not become a rignlar feature much before 1820. In handleaps the dida is to equalise the chances by apportioning to each horse the weight which is the opinion of the office. weight which, in the opinion of the official hands appor, will bring them together in a dead heat the rules provide for the due pub of the conditions of any handicap and the date at which the entires close The wights assigned are pub. in the Racing Calendar, and owners who do not agree with this handicap can cut their further loss by declining to acc pt—in other words, by becoming non-taiters.

The controvers, over the forward and

backward seat for jumping has resulted in a marked preference for the backward scat for steeplech using The flat racing seat has also undergone changes, the rider usually rides with short leathers, bunched forward on the horse's neck, with his contractions with many lines and stirrup-irons. the old seat the jockey rode with longer leathers, standing in the stirrups. The Amer jockey, Tod Sloan, first introduced the new seat into Lugland

Betting -All contracts or agreements by way of gaming or wagering are null and void by the Gaming Act of 1845, and securities like cheques or bills of exchange given for money lost on wagers are void under an Act of 1711 (In the case of 1) oolf v Hamatton, decided as late as 1898, it was held that H had always come under the wagers contemplated by the Act of 1711) Contributions or subscriptions or agreements to subscribe or contribute towards any plate pure or sum of money to be awarded to the winner of any lawful to be awarded to the winner of any lawrin sport (including, of course, H) are expressly excepted from the operation of the Gaming Act, 1845 (see also Berling, Contracts, Guning, and Gambling) The business of bookmaking is only illegal if carried on in contravention of the Betting Act, 1803, which Act prohibite the keeping or using a house or other place for betting purposes, and the whole question turns on the judicial construction of a place within the meaning of the Act It has been held that I etersall's enclosure is not such a place that word apparently is not such a place that were apparently bring construed cyu-dem generis with house, office, or room Betting is permitted with a bookmaker who acts as an agent for his client, and with whom accounts are settled weekly. The tote, a mechanical betting machine, is now

Jockey Club with headquarters at Bois- | machinery and ladies' clothing manuf. fort, while race-meetings were held at Antwerp, Ostend, Bruges, and Spa. H. was also making considerable strides in the E., particularly in India and Malaya. Foreign-owned horses are allowed to com-Foreign-owned horses are allowed to compete in Eng. races, but so far a similar privilege has not been extended to the horses of Eng. owners on some foreign courses. Eng. racehorses, however, are sought after by foreign buyers for breeding purposes. See Ruff's Cuide to the Turf; H. S. J. Bourke, Horse Training, 1928; J. Hislop, The Turf, 1949.

U.S.4.—In what is now the U.S.A. H. in the beginning was largely confined to the S, states whose settlers were chiefly Brit. and brought with them the habits brit.

Brit., and brought with them the habits and traditions of the home country. When New York became a Brit. instead of a Dutch colony, II. was introduced there, and that state is still the locale of some of the best race-tracks in the country.
Before the Civil war New Orleans was
famous as a racing centre. Kentucky is
pre-eminently the race-horse breeding
state. The section near Lexington. known as the Bluerrass region, is filled with stud farms, and Kentucky horses are with stud farms, and Kentheky horses are excelled by none. The best-known tracks are Belmont Park, Aqueduct, Empiro City, and Jamaica near New York City, the one at Saratoga, New York, four near Baltimore, four near Chicago, Churchill Downs in Louisville, Kentucky, and Latonia in Kentucky, opposite Cincinnati. Most of the tracks in the U.S.A. differ from those in Great Butane, in that they are discussed in the tracks in the U.S.A. differ are circular, and the turf has been re-moved, the roadway being made of dirt. In recent years the totalisator, known in the U.S.A. as the Parimutuel, has been installed in many race-tracks by state law, the state getting a percentage of the receipts, and bookmakers being barred.

Horse-radish (Cochleana Armoraria), cultivated plant belonging to the natural order Crucifene. The root has a strong pungent taste which closely resembles mustard, and is used either grated or made into a sauce, as a condiment with beef.

Horse-shoeing, see FARRIERY.
Horse-tails, see EQUIPERI'M.
Horsforth, tn. situated in the W. Riding of Yorkshire, England, 5 m. to the N.W. of Leeds. It manufs, woollen goods.

Pop. 12,200.

Horsham: (1) mrkt. tn. in the co. of Sussex, England, lying 18 in. N.W. of Brighton, and about 36 in. S.S.W. of London. Among its buildings of interest are the old church, which has been restored, the grammar school, and corn exchange. The chief industries are tan-ning, brewing, iron-founding, and coachbuilding. Here also is situated Christ's Dullding. Here also is shuased Christ of Hospital, which was moved from London Pop. 21,000. (2) Th. on the Wimmera R. approximately 200 m. N.W. of Melbourne, Australia, centre of the Wimmera dist., the largest wheat growing area of Victoria. The th. has a very modern the control of the Wimmera dist. hall (seating 1000), 7 churches, base hos-pital, and a High School, and State School. The chief industries are flour milling, agric. implement foundry, textile

Other primary products associated with the tn. are wool, fruit, tomatoes. Pop. 6500.

Horsley, John Calcott (1817-1903), Eng. artist, b. at Brompton, Loudon. in 1856 he was elected an R.A., and from 1882 to 1897 he was treasurer of the Academy.
His best works are those dealing with
everyday life. Among his works are
'Rent Day at Haddon Hall.' 'Canght
Napping,' L'Allegro, Il Penseroso,' and
'The Healing Mercles of Christ'—the
altar-piece in St. Thomas's Hospital

chapel.

Horsley, Samuel (1733-1806), Eng. pre-late, b. in London, and educated at Westminster School and Cambridge. In 1759 he became rector of Newington, a living which he held till 1793. He devoted a which he held till 1793. He devoted a great part of his time, however, to a controversy with Dr. Priestley on the doctrine of the divinity of Christ. Among his other preferments may be mentioned that of hishop of St. Davids in 1788, Rochester in 1793, and St. Asaphs in 1802. He ed. the works of Sir Isaac Newton (1785). See J. Priestley, Tracts in Controversy with Horsley, 1815; R. Hall, Hemarks on Horsley's Sermons, 1819.

Horsley, Sir Victor Alexander Haden (1857-1916), Brit. surgeon and neurologist, b. at Kensungton, London. He was prof. superintendent of Brown Institution 1884-90; secretary to the Royal Commission on Hydrophobia, 1885; surgeon

1884-90; secretary to the Royal Commission on Hydrophobia, 1885; surgeon to the National Hospital for Paralysis and Epilepsy, 1886; Fullerian prof. at the Royal Institution, 1891-93; president of the Pathological Section of the Brit. Medical Association, 1892-93; prof. of pathology, Univ. College, 1803-96. From 1906, he was Emeritus prof. of clinical surgeons and conventions environmental links. surgery and consulting guizeon at Univ. College Hospital. One of the leaders of the medical crusade against alcoholism; and author, in collaboration with Dr. Mary Stinge, of Alcohol and the Human Rody (1917). Body (1907). Among his other works are: heremments upon the Functions of the Cerebral Cortex (1885), Iran Surgery (1887), Hydrophobus and its Treatment (1888). While serving as consultant with forces in Mc-opotamia he suffered heatstroke, and died at Amarah.

Horst Wessel Lied, rallying song of the Ger. National Socialist or Nazi Party, the words of which were written by a student, Horst Wessel, who was born in 1907 and was killed in 1930 in a Communist-quarter of Berlin where he lived and commanded a section of the Abledung or Storm Troopers of the Nazis. No certain details Troopers of the Nazis. No certain details exist of the precise manner of his death, but sev. persons suffered death, for their supposed implication in it, at the hands of the Gertapo. The song was sing to the time of a minic-hall song which was popular amongst the troops in 1914.

Horta, cap of the is. of Fayal, belonging to the Azores group. It is situated on the S.E. coast of the is., and is also the cap. of the dist. of H. Pop. about 7000; dist., 53.700.

52,700.

Horten, tn. situated on Osio Flord, Norway, about 30 m. S.W. of Osio. It

Hortense Eugénie de Beauharnals (1783-1837), queen of Holland, the daughter of the Empress Josephine by her daughter of the Empress Josephine by her first husband, was born in Paris. In 1802 she married Napoleon's brother, Louis Bonaparte, king of Holland. On the fall of Napoleon and his family in 1815, she field to Switzerland. The youngest of her sons afterwards bocame Napoleon III. See T. A. Taylor, Queen Hortense and her Friends, 1907; Mile. Cochelet, Mémoires sur la reine Hortense et sa famille, 1907; J. Hanoteau (ed.) Mémoires de la reine Hortense publiés par le Prince Napoléon. Hortense publics par le Prince Napoléon, 1927.

Hortensius, Quintus (114-50 B.C.), surnamed Hortalus, was, after Ciccro. the most famous of the Rom. orators. He was the son of Q. Lutatins Catulus, and so belonged to the ari-to-ratic party. He supported Sulla in the civil wars, fought during two campaigns (90-89) in the Social war and become curvall in 69 B.C. guring two campaigns (190-89) in the Social war and became consul in 69 B.C. In 63 B.C. he came into conflict with Cicero and, on Pompey's return from the E. in 61 B.C. retired into private life. His apoeches are not examt, but are described by Cicero as Asiatic and florid in style.

by Cicero as Asatic and flotid in style. Horthy de Nagybanya, Miklos, Hungarian admiral and regent; b. 1805, of noble family at Verd in Szolnok comitat. Studied at naval academy, fiunc. Recame A.D.C. to Emperor Franz Josef, and served in naval dept. of war ministry, Vienna. In the First World War, commanded cruiser Norura attacked Italy at Pouto Corsini, San Giovanni di Medua, and Otranto. Severely wounded in last-mentioned ongagement, May 14, 1917. When peace came, H. was placed in command of the navy of the dual monarchy: when that monarchy fell, he monarchy: when that monarchy fell, he returned to Hungary; and, after the collapse of Bole Kun's Gov., he organised its anti-Bolshevik successor—entering Budapest, 1919 and assuming the title of Indapes, 1919 and assuming the title of Administrator of the Realm' (1920). In Feb. 1920 he was elected regent of Hungary by the nutional assembly. Twice in 1921 he used force against the ex-Emperor Karl (Charles I.), who attempted to become king of Hungary. He rose to power as the safeguarder of the Hap-burg Monarchy, but kept his position as protector of the interests of the big landowners. Described by Count Karolyl as the ' Hungarian Quisling,' he was the first to introduce fascist methods in Hungary and promoted a rapprochement with Italy. He supported whole-heartedly Ger. militarism, because Hungarian landlords always needed the help of Germany to carry on successfully a reof Germany to carry on successfully a re-actionary policy. As a reward for stab-bing his ally Yugoslavia in the back in 1941 he secured purts of Transylvania, Slovakia and the Banat but soon found that he had forfeited Hungarian inde-pendence. His regency ended in 1941, Horticultural Colleges, see HORTICUL-

is a naval port, and has an arsenal and an observatory. Pop. 10,000.

Hortense Eugénie de Beauharnais was founded in 1804, and received a charwas founded in 1804, and received a charter in 1809. The Society holds two shows yearly, one, the Spring Show, in the Royal Hospital Gardens, Chelsea, in May, and the Antunn Show in Sept. or Oct. The headquarters are at Vincent Square, S.W. 1 and the gardens are at Wiley, near Ripley, Surrey. Other important H. S. in the Brit, Isles are the Birmingham Indunical and Horticultural Society, tounded 1829: the North of England nam Botanical and Horticultural Society, tounded 1829; the North of England Horticultural Society, the Glasgow and Horticultural Society and the Royal Horticultural Society of Ireland, founded in Publin in 1830. In the U.S.A. the Horticultural Society of New York was founded in 1900 and incorporated in 1902. APIT York was founded in 1900 and in-corporated in 1902. Among many others, there are the Horticultural Society of Pransification and the Massachusetts Horticultural Society in Boston. In Itana there are H. S. in Paris, Le Havre, Lyons, and Mursellles. Other countries with horticult or allied societies are Austria, Belgium, Bulgaria, Canada, Canadayania Denmark Holland, India Cresposition of the Crespo Switzerland, and Russia. The first internutional horticult, congress was held at Brussels in 1864.

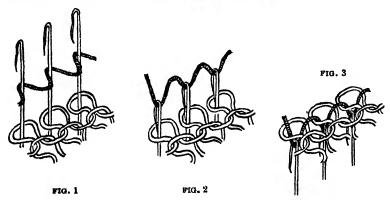
Horticulture (Lat. hortus, garden, and culture, culture), is the scientific art of garden cultivation, and includes the growing of flowers, fruit, and vegetables. Almost every keg. (c), now provides special facilities for the study of H. and many ofter co. council scholar-hips. The chief colleges which make a speciality of horti-cult education are the Horticult. College, om education are the forticult. College, Swinley, Keni (founded 1889); Studiey Ague, and Hortleult. College for Women, Wanwickshire; the Ague, and Hortleult. College, Wellfield; and a School of Garlening for Women at Edinburgh. The Royal Hortleult. Society holds ann. examinations in April. The univs. of the Michiga and Reading, and the colleges. combridge and Reading, and the colleges of W and E. of scotland possess uepts. of agriculture and H. Courses in H. usually not hot houses and hot hot, and in many cases poultry turning See BOTANY hot-houses and nococcy, cases poultry turning See BOTANY BUIDS; FERNS; FIGHA; FLOWERS FIGWER SHOWS; FIGHT; CARDEN ARE GAPDENING; HERBS; POPROUSE; LAWNS PLANT HORMONES; PLANTS; SHRUBS SOIL, TOPIARY; VIGETABLES.

Hortobagy Puzzia, part of the Hungar-nn plan W. of Debrezen, with cattle-rearing industry. Ares. 322 sq. m. Horton, Robert Forman (1855–1933),

kng. Congregational minister. b. London, and educated at Shrewsbury and New College, Oxford. In 1877 he was president of the Oxford Union, and in 1879 he became fellow of New College and lecturer on hist in 1880 he was appointed pastor of the Lyndhurst Road church, Humpstead In 1886 he was the chultrum of the London Congregational Horticultural Colleges, see Ho Creed (1895), and The Teaching of Jesus (1895). The Trinity (1901) and Pastoral Epistles (1901), The Holy Spirit (1907). The Early Church (1908), Great Issues (1910). Horton, Sir Max Kennedy (b. 1883), Brit. admiral. He entered the Royal Navy at the age of seventeen and served in submarines during the Eirst. World

Navy at the age of seventeen and served much may be acceded and the name Hor was the common much and the Legion of Honour. He was promoted to Captain in 1920 and commanded the 1st Submarine Flotilia, Atlantic Fleet, 1922-24. In 1926 he went to the admiralty as Assistant Director, Mobilization, and in 1928 served for two years as Chief of Staff to the Commander-in-Chief, Portsmouth. In 1932 he was appointed Rear-Admiral, commanding tites. Pop. 14.900.

i.e. 'Hor the child,' when he is represented as seated on a lotus-flower with his finger in his mouth, perhaps as a symbol of socrecy and silence. The name Hor on sorrecy and stience. The name Hör was also prohably applied to lesser divinities, but to all forms the falcon was held sacred, and the name Hör was the commonest title of the king in the earliest dynasties. The N. kingdom in particular was under the parteners of H.



2nd Battle Squadron (1933) and 1st (ruiser Squadron (1935); in 1936 Vice-Admiral, commanding Reserve Fleet (1937-39). At the beginning of the First World War he became Vice-Admiral, Submarines, and many early Brit. successes in the submarine warfere were due to his efforts. From 1942 until the end of the war he was Commander-in-Chief, Western Approaches, and was largely Western Approaches, and was largely responsible for the success of the counter-offensive to the German U-boat campaign. H. retired at his own request in Nov. 1935. Orders conferred on him in the course of Orders conterred on him in the course of his long and successful naval career include C.B., 1934; K.C.B., 1939; G.C.B., 1945; Orders of St. George and St. Anne (Russia); Grand Cross of the Order of Orange Nassau (Netherlands); Commander of the Order of the Redeemer (Greece). It holds the silver medal for caving life on the occasion of the loss of regreece). He holds the silver medal for saving life on the occasion of the loss of the P. & C. steamship, Delhi, which ran aground off Cape Spartel Morocco. Nov. 13, 1911. In Jan. 1946 he was appointed Bath King of Arms of the Order of the Bath.

Horus Sicous, see Herbarium.

Horus (Egyptian Hör), in anct. Egyptian mythology, was the sun-god and equivalent to the Gk. 'Apollo.' He is sometimes identified with Harpokhrates, He is

Hosanna, shout of praise and adoration used by the multitude at the triumphal entry of Jesus into Jerusalem (Matt. xxi. 9).

Hosea, first of the twelve minor prophets according to the Biblical order. Nothing is known of him beyond what is told us in the Book of II. From this we learn that he was a native of the N. kingdom of the Wall and that his father's narrow learn that he was a native of the N. king-dom of I-rael, and that his father's name was Been. The period of his prophedes is given in the first verse: 'In the days of Uzziah, Jotham, Abaz, and Hezekiah, kings of Judah, and in the days of Jero-boam the son of Joash, king of Jerael,' Since the last-named king d. during the life of Uzziah, those dates are not in full agreement. The prophecies fall into two parts: (I) Chapters 1-3, which tell the story of the prophet's marriage with Gomer the daughter of Diblain, a profligate woman, and of the birth of his three children, to whom allegorical names are given (i. 4, 6, and 9). The application of this story 6, and 9). The application of this story is then made to the relations between Yahweh (Jehovah) and his people. (2) Chapters 4-14, wherein he denounces more fully the particular sims of unfaithfulness committed by the Israelites against Yahweh, such as their introduction of idolatrous ceremonies and their alliance with and trust in foreign nations. The

question as to whether the account of the prophet's marriage is truly biographical, or is merely introduced to give point to the later accusations has been much dis-cussed. There seems to be no sufficient reason why it should not be biographical There are some interpolations such as (1) those passages which extend the application of the prophecies to the S kingdom of Judah (2) those which interrupt the of Judan (2) those which interrupt the denunciation to speak of a period of final happiness See A linson, Der Prophet Hosea, 1851 W R linth, I wate Minor Prophets, 1876 and studies by S L Brown, 1932 L 1 Birns, 1322 G (1 Morgan, 1934, R H W heeler, 1948 also north by W Nowack A State and R. Morgan, 1934, R H Wheeler, 1948 also works by W Nowack A Sayco, and B Duhm

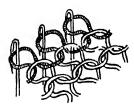


FIG. 4

Hoshangabad, the and dist of India in the Nerbudda div of the Central Provs, on the 1 b of the R Nerbudda, 40 m S E of Bhopal The chief industry of the the is brass working Pop 12,000 The prin crops grown in the dist are wheat, millet, and oil seeds Area 4500 sq m Pop 446 000 eq m

99 m 109 440 000
Hoshea: (1) diginal name of Joshua
(Nu xiu), (2) tuker of Liphrain under
David (1 Ch xxvii) (3) the last king of
Samaria who slew ickah son of Re
maliah Assyrian inscriptions show that he was of the pro Assarian party in Israel and acted in concert with and as the pup-pet of Tiglath pileser III But doubtless H. felt the Assarian tribute burdensome and thereafter sought for greater inde-pendence by alliance with sawa king of Egypt. The non payment of his tribute Egypt The non payment of his tribute brought shalman ser's forces against his cap which was besieged for three years Shalmaneser died and was succeeded by Sargon who conquered H and took him prisoner (2 kings xvii)

Hoshiarpur, (ap of a dist of the same name in the Juliundur div of the Punjah India, 62 m F of American manufa of cotton goods, inlaid wood work, and lacquer Pop 21,285 The dist. exports sugar, rice, and other grains, tobacco, and indigo Area 2241 sq m. Pop 930,000

Hosiery in its limited sense refers to the manuf of stockings (liose) but the term is used to designate all textule fabrics which are manufactured on the looped wcb principle and knitted goods, whether

we of principle and annual goods, whether made by hand or machinery.

Hand Initing requires very few and simple implements, consisting of two or more straight needles. On to these an indefinite number of loops are cast, made of one continuous thread of yarn which is passed through the previously loops to make fresh series, and left hang bont, wood or plastic and of any length or thickn . If only two are used the fabric will have a solvedge on both sides if three or more are employed a circular web will be formed. See further under KNITTING

I rame work knilling, was introduced by the Rev W Lace when he invented the sto king frume in 1589 This frume thing d from the principles of hand knilling in having a separate needle for knitting in having a soparate needle for each loop instead of casting all the loops on to one needle. Fach needle consists of a shink with a spring pointed hook which can be pressed into a socket in the shank. The following diagrams are to show the formation of the knitted loop with that the peof needle all other machine patts have been omitted to give a clear view of the stitches and needle. Fig. 1 how the new row of loops being formed whil it the fabric is hid lower down the needle. In Fig. 2, the needles have been needle In Fig 2 the needles have been lowered to allow the loop into the hook of the needle In he hook has been closed and is till descending into the loop of the privious row of stitches. Fig. 3 shows the o'l loops rising above the needles and descending on the new loops which are still held in the hook of the needle lig 4 shows the needles rising to their original position with the new row of loofs sliding down the shauk of the

not die The first fabric made by Lee was a flat picce with selvedge on both sides from which the garment had to be cut to hape and sown up but he soon learned to fashion by transferring loops at the edges, in wards to narrow and outwards to widen In I ce's machine the thread had to be laced over the needle by hand and it was not until 1857 that Luke Barton invented the first successful machine fitted with self acting mechanism for fushioning knewn as the straight bar rotary frame

Il arp knutting varies from frame work knitting in having a separate thread for ca h needle instead of the same thread for th whole row. By the invention of the Dawson whice (1791) the threads can be laid in any direction and thus give greater sc pe for variety of design in patterns and colour which make this form of knit ting specially suitable for household fut rice

Circular knilling was made possible by a n thino patented by Sir Marc I Brunel in 1816, which he called the tricoteur This produced a tubular web but did not come much into use till improved upon by Peter Claussen of Brussels in 1844. The pro-

circular fabrics. The seamless stocking (as made on the circular machine) is woven in strong formation : e in endless succession whereas on a fashioned knitting-machine each hose is in ide and cast off

machine each hose is in ide and cast off the work was the first variation of the plain fabric produced in Lees machine, and was produced by an invention of Jededith Strutt in 1758, by which a second set of needles, placed at light angles to the first, dr w their loops to one side, while the first set of needles drew theirs to the other side of the frame Lee's frame had only sixteen needles for a single modelly mything have as in wherea modern machines have as many as 120 needles for a in Some of the most modern knitting frames work at a great special One with flurty dives of 476 medies each has in all 11 230 medies, each of these form loops at the rate of 50 in a minute so that 1,142,400 loops can be tormed in a minute (the speed of an expert hand knitt i is 100 loops per minute)

The materials used in hosier varocotton, wool, salk and many varying varies such as Rayon and valon. In the trade the term 'stocking is obsolete and sock is used only for childing H. Mens socks are called half hose and lince length H is known as three-quarker has the two chief methods of man t are seamless and fully fashume! Set Chumbell in larms and kathes 122 Mrs. Howery Mills, U.S.A., the St. f. H. sury, 1931. A.W. Eley Stockin s. S. C. et m., hayon,

Yylon 1916
Hosmer, Harriet (1880 1908) Amer
sculptor, native of Wat in Missachu
setty, (S.A. She studied under Gibson in Rome. Her immated and original statue of Puck was 1 at it success ther other host works at Anobia in thains. ' Beature (one kawn, and 'A Waking, From Cortain technical process of the art of scuipture are of her invention

Hospice (Lut hospitus) ment) name given to the hinnes of rest provided as a shelter for trivilers passing yer the alps by the varies monastic orders. The most famous H- are those on the Grad at Bernard founded 962, on the 's Gothard disting for the three teenth century, on the Mt (cms, the shipp) is to the Little 's Bernard Hospitals', com in the close Spain, the 'W f the tree of bacclene Population of the Comment o

6900

Hospital Fund, King Edward s, founded in 1897 by an 'I dward VII when ho was Prince of Wilc-, to common rate the sixtleth ann v reary of his morh i s reign Its object 1 to equie ade in the upport of the hospids and conviloscent homes of London Exh individual claim is its object 1 to equic add into upport have been twive or more monastic constitution of the hosts its and convides on thomes of London kind individual claim is considered in its merits. The total distribution in the first year was just over \$50,000, and is now nearly over \$50,000, and is now nearly over \$500,000 order are the Brandonburg \$1.000 order are the Bra

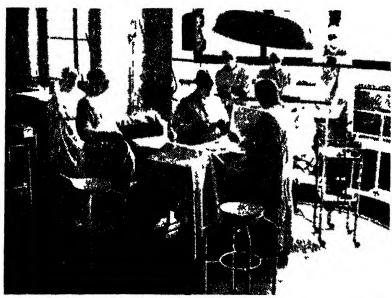
duction of the latch needle by Fownsend | publicly provided hospitals under the in 1808 helped the production of cheaper provisions of the National Health Service circular fabrics. The seamless stocking | Act, 1946 the fund, consistently with the Act, 1946 the fund, consistently with the powers conferred by its Act of Parliament of 1907, may be used for the 'support, benefit or extension of the hospitals of London.' All such things as come within the scope of the above provision and such as are incidental or conducive to it will come alike within the scope of the kund (Lord Catto) The President of the kund is HRH the duke of Cloucorter

Hospitaliers Knights (OF hospitalur, Lat hospititis, from hospes, a guest), name applied to charactel brotherhoods found d stabilitent periods, and in differ on countries to the circ of the sick in he jutils the kinghts of St John of Terusalem were a religious brotherhood under the couspic thad been founded to him in Jerusalem. They had then origin in Pile time in the eleventh century. then die forme to take christian pil grims visting the Holy Sepulchio under then our and protection I he ir military organisation wis perfected in the fwilth century then they unsue essfully de-tended for after the taking of fernsalem by the Musins. In the fourteenth century the sphured and occupied the is of Rhol and continued to hold it till 152 when it was seized by the lurks After this their influence materially dochine! In 1 0 they found a shelter in Wilten it in the image country of the interest of the country of the countr pow the were envied by nost of the sovice two funds and in 130 Henry VIII consected their property in find in 1 the vow odrote on self to the wisk of a ho ptaller wis generally added to the of incommons of poverty chastity and obedience commanded by sant varies the mark of the order was the link to be and cowl, with the cross eaght pants on the left brest, consisting of four barbed arrow heads meeting at their points, the well known Maltes (1988). In modern times this has Maltes arises In modern times this has been slightly altered and modified in the many estimates or engregations under various name and various rules at the new period this order has been terned knights of Malta. In is the head quarters were fixed at Rome and givened by a council under a grand master. The Hospitaliers owned in may strong a ties in Syria, like their contemporaries the lemplars, and on the uppression of the latter in 1312 the pore transferred most of their posses. the port transferred most of their possessions to the Hospitallers Bosides the sions to the Hospitalicis. Besides the Knights of St. John of Icrusalem there have been twelve or more monastic con-

Ited Cross Society It is a purely philau-thropic institution, distributing charity convalescents, etc. See I Vertot, thropic institution, distributing charity to convalorents, et Se I Vertot, Historie des chevaliers hospitaliers de Sienn de Jerusalem, 1726, i Woodhouse, Military Religious Orders of the Middle Ages 1879, I Delaville de Roulx, Ics Archives, la bibliotheque et le trésor de l'ordre de St. Jean a Malle, 1883 and Hospitaliers 1901, W. Bedford Malta and the Knights Hospitaliers 1891 R. Kelp Cohen Anglis of Malta 123 1793 1920 I king Knights Hospitaliers in the Holy, I and 1331

and surgery Particular classes of patients or patients suffering from infectious dis or patients southing from interceous task. Use, such as ever or smallpox, or from diseuses of a particular organ, such as eye car nose and throat, or from maladies like cincer are treated in special H. The following is a list of the main classes of H with examples from London, and else where when stated

I GI 11 AT HOSPITALE -(a) Teaching St Bartholomey's II (founded 1123), St Ihoma s II (1200) Westminster H (1711) (any s II (1724) St George s H (1 3) Lendon Hospital (1710) Charing



AN OLUBATION IN HOGKESS IN A HOSPITAL

Lox I hu.

hospes (genitive hospits) meaning host or guest. Hotels and hostel have a similar derivation, but like H these terms have become limited and specialised in their application

Hospitals are institutions for the tem porary reception of the sick. The word University College H (1833), Middlesex H is derived from the lat adjective H (1833) St Vilvs H (1833), King's hospitals which belongs to the noun (1839) St Vilvs H (1842), King's hospitals which belongs to the noun (1839) St Vilvs H (1842), King's hospitals which belongs to the noun (1839) St Vilvs H (1849) Von tracking Mittipolitan H (1849) (a at Northern Central delivation but like H (1849) (a at Northern Central Vilvation and Park Vilvation (1849)) (a at Northern Central Vilvation (1849))

1 In 11 (1756)
11 SPECIAL HOSHILLS —1 For special classes of persons (a Children's hospitals (it at Ormand St.) application

Classification—H are teaching or nonteaching according to which rion not they be actached to them included schools where students receive technical instruction by properly qualified iccturers and demonstrators. According to another action they are divided into general Winner (1810) (c) Maternity and special H. A general H, as its name implies, is designed to treat all kinds of patients and should therefore be equipped with overy appliance, both for medicine (1712) (d) Hospitals for foreigners (c) must be patients and should therefore the equipped with overy appliance, both for medicine (1712) (d) Hospitals for foreigners (e) Hospitals for infectious diseases (a) Hospitals

for fever and diphtheria: London Fever | vices systematived to serve a given area, Jore and alphaneria: London Fever H. (1801), Gore Farm H., Kent (1890). (b) Small-par hospitals: Joyce Green H., Kent (1903). (c) Hospitals for consumption and diseases of the chest: Brompton H. (1841), Mount Vernon H. (1860), Royal National H., Islo of Wight (1867). H. (1341). Moulth Vernon II. (1800), Royal National H., Islo of Wight (1807). 3. For diseases of particular organs: (a) Dental Hospitals: Royal Dental H. of London (1858), National Dental H. (b) Ophthalmic hospitals: Royal London Ophthalmic II. (Moorfields') (1801). (c) Throat, Nose, and Ear Hospitals: H. for Diseases of the Throat, Ear, and Nose (1863). (d) Rectum: St. Mark's H. (1835). 4. For special maladies: (a) Cancer: Cancer II. (Free), (1851). (b) Paralysis and epilepsy: National H. for the Paralysed and Epileptic (Albany Memorial) (1859). (c) Skin diseases: St. John's H. (1863). (d) Deformities: Royal National Orthopædic H. (1839). (e) Incurables: Royal H. for Incurables, Putney (1854). (Many great London and provincial Hs. were seriously damaged by Gur. air-raids in 1910-44. See further under London, etc.)

Administration.—In the Brit. Isless

Administration.-In the Brit. many Hs. were, until the National Health Act came into force in 1918, largely supported by voluntary contributions, whilst on the Continent and in the United States on the continent and in the United States these institutions are, for the most part, supported and controlled by municipalities. The rate-supported H. in England formerly almost confined to fever and smallpox H., a few ambulance stations, and some homes for sick and convelescent children both in the country and at the reside were supported in 1927. and at the seaside were augmented in 1927

by the inclusion of the l'oor Law Infirmaries ('workhouse' H.).
Sir Wm. Fergusson's Commission on Hospital Abuse (1871) made the following recommendations which are here quoted as indicating deficiencies previously existing in our H. system: (1) to improve the administration of poor-law medical the administration of poor-law medical relief; (2) to give the poor-law authorities control of all free dispensaries; (3) to check the unrestricted system of free relief; and (4) to pay the medical staff. It is well estab, that a considerable number of people who were able to pay availed themselves of free treatment, which was only intended for the poor, and pay wards are now attached to all large H., the patients admitted to them large H., the patients admitted to them giving fees according to their social status. Since 1909 almoners have been appointed in certain H. to decide whether or not applicants for medical assistance are in a position to contribute towards its expense. Since 1948 this work has become un-necessary, since H. treatment is now available to all under the National Health Act, but II. almoners still have important

and are remarkable in the great advance shown as to the place of H. service in the state. The scheme was discussed in 1927 by the Brit. H. Association.

1. Domiciliary, including curative and preventive treatment. Staff: doctors, pharmacists, nurses, midwives, health visitors, and other officers of the Health

authority.

2. Primary Health Centres, including medical, surgical and maternity beds, out-patient clinics, dontal clinics, accommodation for equipment needed for treatment and investigation, accommodation for the work of communal services, ambulance service. Staff: general practi-tioners, visiting consultants and special-ists, officers engaged in communal services, visiting dental surgeons, workers in an-

ciliary services.
3. Secondary Health Centres, including facilities in curative services in cases requiring highly specialised diagnosis or treatment. Staff: consultants and spec-ialists, officers of communal services, dental surgeons, workers in ancillary

services.

4. Supplementary services, including facilities for apecialised treatment of such conditions as tuberculosis, mental disease, etc. Staff: appropriate specialists and workers in ancillary services.

5. Teaching H. and medical schools for cases of unusual difficulty; including facilities for research and post-graduate study. Staff: consultants, teaching and research staff, workers in ancillary services.

6. Research: clinical records.
7. Adminstration: The estab. of a single Health authority to supervise local administration whether curative or prerentive. Representation of the medical profession on each authority and the estab. of Local Medical Advisory Boards.

A further step forward was indicated by Mr. Neville Chamberlain as Minister of Health in 1927 whereby by special legislation Poor Law H. were to be transferred to the nunicipal authority. This measure had the very important results of removing the stigma of penury from Poor Law patients and allowing all classes to become eligible for institutional benefit.

The prohibitive charges of most private Nursing Homes have led some II. to conduct depts, for private patients with fees which are within the means of the middle

and lower middle classes.

Busides the pressing need for co-ordination of H. services the financial position recently became increasingly urgent. It was evident that the voluntary system was inadequate to supply the necessary income and many of the voluntary H. functioned with restricted accommodation as a result. Local authorities act, but it almoners suit nave important.

The rapid growth in the number of H. in recent years has emphasized many problems both of finance and administration, and in order to meet them the following recommendations were made by the Medical Consultative Council in 1920 and pub. In their report. They originated with a scheme of combined medical serclaimed and many patients were therefore asked to guarantee payment of costs before admittance, a procedure which was contrary to the object for which the H. operated.

Voluntary Hoganials under the National Health Service Act, 1946.—This Act introduces drastle changes in the system of voluntary H.; for in effect it nationalises the existing H and such future H. as may be required. The Act imposes on the minister of health the duty to provide throughout the United Kingdom such H and specialist and nursing services as may nicet all reasonable requirements. The former honorary staff are paid for their services Spicial accommodation may be provided for private patients who undertake to pay the prescribed charges, which are designed to cover the whole cost of the accommodation and services provided for the patient at the II, including an appropriate amount in respect of overhead expenses, and the minister is empowered to sue for the amount. Included in the H. and consultant services are all forms of general and specialist H. care and treatment, both in patient and outpatient. Specialist opinions and treatment of all kinds are to be made available ment of all kinds are to be made available at H. (as well of course at clinics, institutions health centres, etc.). For this national service the minister of health will take over both voluntary and public H. Supplementary services, such as midwifery, maternity and child welfare will be provided through the local authorities. In introducing this Bill, the minister of health, Mr Ancurin Bevan, admitted that the voluntary H had done valuable work. the voluntary II had done valuable work, but he believed that 'it was repugnant to a civilised community for Hospitals to have to rely on private charity.' The gov. rejected the idea that local authorities should take over the H. and considered that the only thing to do was to create an entirely new II service, to take over voluntary H. and local goy H and to organise them as a single H. service to organise them as a single H. service throughout the country, with the nation itself carrying the eye inditure. In the early years, the gov. estimated the cost at £152,000,000, the net ann additional exchequer expenditure being placed at £95,000,000, after allowing for a contribution of £32,000,000 from the National Insurance Fund. Regional Bearies to Insurance Fund. Regional Boards to administer the H. and specialist services will be set up in about a score of regions, each large H. or related group of H. having a management committee. Except in the a management communete: Except in the case of voluntary teaching H., endow-ments will pass to a new fund called 'the Hospital Endowments Fund,' which the minister of health will administer, the cap, value of the fund being apportioned among the regional boards and the income from each portion passing to the board.

The Act provides that where any volun-The Acc provides that where any voluntary H. is designated as a teaching H. or for the patient a journey through the open is one of a group so designated, all the H. are but the modern operation suits is endowments will be transferred to a planned as part of the surgical block, near Board of Governors constituted in the manner provided in the Act. Endownents given after the passing of the Act has no fewer than nine parts, including the form of the surgical block, near the wards and is diplicated (or multiments given after the passing of the Act has no fewer than nine parts, including instrument room, dressing rooms,

day, upon trusts which provide for the application of the property for some specific object distinct from the general purposes of the H. and for administration as a distinct cap. fund, will not be transferred to the H. Endowments Fund but to the H. Management Committee constituted under the provisions of the Action that H. as recovered M. In relief to the for the H. or group of H. in which it is comprised.

Architecture .- A H., viewed as a number of wards, each containing so many beds, with kitchens and other offices within ea-v reach of wards, is a simple building in conception, and there has been only one really important change of plan in ward crection during the last 200 years. The old method provided windows on one side of the ward only, and is well illustrated by the older blocks of the two London H. Guy's and St. Bartholomew's. In each there is a central entrance and staircase and two long wards on each side, making four in all, on each floor Thus, each ward is lit by a single row of windows, down its length, and possibly by one or two windows at the end. In the new method in order to get the most light and are such ward how sufficient as heat date. air, each ward has windows on both sides The architectural problems of the H. are by no means limited to the building of the the arcintectural problems of the h. are by no means limited to the building of the wards, and in particular, the H in a large city should be connected with a univ. or have a medical school attached to it, so that it may take advantage of modern scientific freatment and research. A H in this case (to borrow the claim of one great institution) is a 'city within a city,' its div is 21 hrs., it is a bread bakery, a power plant for the manuf of current, a liundry, a college with lecture theatres, a labor story for scientific research, a ware house that stocks cotton wool by the ton, a museum and a gymnasium. It has itstire great depta. : Medical, Surgical and Out Patients, and has many rooms and wards for X-ray treatment and X-ray research work. Many of those depta dividing a the hospital grows, but in America during the last fifty years the sciencisty of wealthy philanthropists has son ctimes enabled the boldest schemes to be carried out as a whole, though the son crimes enabled the poldest schemes to be carried out as a whole, though the speed with which medical science advinces rarely leaves such work unaltered. The new addition to a li in any great country is probably the best of its kind of thult. The new blocks recently built at high Bartholomer's in London, for example, as far as human skill makes it possible combine the advantages of all possible, combine the advantages of all privious architectural experience. This may be exemplified in the treatment of surgical cases; when new hygienic rules revolutionised the old operation rooms the operation theatre was usually built in any convenient corner as a separate three 100m erection and was frequently far from some of the wards, thereby involving

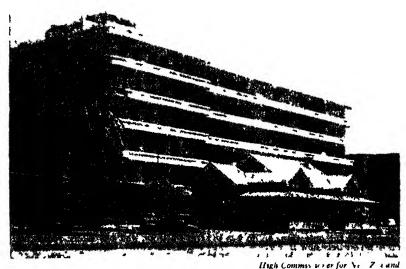
sterilising room operating theatre and a century ago (Liston amputated a leg anaisthetising room, where, in agreeable under other at University College H. in surroundings the feelings of the patient [1818] secondly Lister's introduction of need not be harrowed by the sight of any surge al apparatus before the administra

tion of the anesthetic

History—It is no exaggeration to say that until the eighteenth century the sick could only be cared for at home or at least in private houses. As late as 1710 St. I homas's and St. Bartholomows H. were the only asylums for the set. in London, and in the provinces such institutions primarily Christian institutions l gyptian

autiseptic methods at Glusgow Royal Infirmary in 1865 puring the way for modern asserts, thirdly the improvement in the standard of nursing as a result of Horence Nighting de's pioneer chorts at scutair in the Crima and later in her nursing school at St. Thomas' H in London

It is a mistiken bolief that II were



THE PUBLIC HOSTITAL, GREEN TANF, AUCKLAND, NEW TEATAND I has is a fine specimen of the modern archit of iral conception of a haspital

were unheard of But an e that day, and especially in the last century, rapid strikes have been made, especially in England and Germany, and the H is regarded as an indispensable factor in all the o' any size, whilst cottage H are surfaces up all over the country. Popular

springing up all over the country Popular education and the realisation of the importance of observing the laws of health wherever people congregate together are responsible for this extraordinary idvance The truth that the welfare of the community depends on the solution of the sick is more appreciated every year, and an attempt is made to stamp out tuberculous by confinement of the injected in sanitoria, the expertation being that in time this scourge will lose its virulence as surely as plague, malipox, and typhoid fever have already done. The e ovents invalids elept in the shadow of their temples of Saturn 4000 B c in the hope that the god would make them well The temple of Esculapius at (os was fre quented by Gk sufferers and to turn to the k, it is known that the Indian en peror, Asoka, founded a H at Surat (c 260 B () and that Haroun al Raschid (d) 1 804) built many asylums at Bagdad

In 1754 - The H development to the USA 1 probably not only the most exon the whole, the mest. To begin with, unlike the case of most of the H. which serve the people of London, those in the larger sized the and cities of the U.S.A. have not for so long depended upon voluntary gifts Lach municipality and many of the cos. maintain their own H, whose budget comes from the taxes imposed upon the public. There is thus are of cutstanding importance in the hist. of H. Firstly the discovery of amesthatics

ensured to the II. a steady and regular income and the ability to hire a regular truncd staff of physician and nurses and attendants. It is estimated that about 10 per cent of the cos in the U.S.A. have then own H. An even larger percentage of the bigger tas have one or more public of the higher the factor of the H in the world are in the U \(^1\) A. The whole undency in the U \(^1\) A is away from the old gloomy quarters suggesting discase and death. The smaller that have often and death. The smaller that have orceating the highest the party colonial style of architecture, and surrounded by parks or rudens to take the patients as much as possible away from the city noises. In the big cities the tendency is to erect skysemper H. Thus the Jefferson H. in Philadelphia is sevention etories high In Philadelphi i is seventeen stories high change of I take susminetical stories high. But probably the biggest H group in the world is that of New York City. It extends from Riverside Drive to Broadway and from Riverside Drive to Broadway and from I odd Str. t to 168th Street, the total site covering 22 acs. Here are the Presbyteriam H, the College of Physicians and Sungeons of Columbia Univ., the Scient H for Women, the New York stato I'venature Institute and H, the babies H the Squire bridge all Institute, the Presbyteriam H School of Nursing, he Neurological H dia 11 of H, the Harkings Pati ats 1 wilnow, the School of Oral and Drital Surgery, the Vander bill Clima and the Liman Institute of Public Health. Somewhere in this visit (hicago of I uke a is nineteen storics high. Public Health. Somewhere in this vist If colony with its 1671 bods nearly sli the ills to which the firsh and the mind are here to can be treated. Many of the buildings are sky scrapers, one towering to twenty two stories. Throughout the 115 A all the newer H are being built absolutely to proof See Sir H bardett, Hospitals and A plums of the World, 1843. Chances Hospita's and the R. W. Chamers Hospita's and the State, 1427 - bummieton 1949 A. G. L. Lves, British II. patels 1919 A. C. Bach meyer and by 1. than The Hespital in Wolein S. aly 1943

Hospodar (Russian Gospadar) Sissona term in tunic, laid a unster, I the tiple which is specially upplied to the head of a lamily or the moster of a house. It was a title of the ruler of Wallachia and Moldayia from the infecuth century to 1866, when lamman the cane independent The title wa also used by the grand duke-of Lithuam and the king- if Poland down

to John Sobieski

Host (Lat hostis, a victim) sacrified of Christ's body and blood in the Holy thocharist applied more particularly to the consecrated water used in the service of the Mass in the Isom Catholic Church, when it is regarded as an expiatory sacrifice. It is a thin, unleavened, the wafer of circular form with certain mystic signs impressed upon it, such as the Crucifixion or the Lamb, when used in the Anglican Church it is usually quite plain. In the Rom, Church the II., after being come crated, is believed to be no longer fread but the real body of Christ, as the wine is His blood (see Transubstantiation).

pleces, one of which is again broken over the chair.e. In the Gk. Church the H. is dipped in the wine before being handed to the communicant. The ceremony of the 'Llevation of the Host' dates from

the twelfth century.

Hoste, Sir William (1780–1828), Eng.
naval officer, b. at Ingoldisthorpe, Norfolk.
He saw service in all parts of the Mediterrancan, and in 1811 he defeated Dubourdatu in a fight off Lissa, and ultimately took Cattaro and Reguse. He was a brillion toommander, and was a favouries of Nison See Lady Harriet Hoste, Minners and Letters of Ni W. Hoste, 1833.

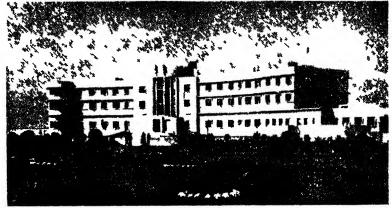
Hotelskiss Gun, gun utroduced into use in the Brit Army during the First World Wai It was for some years used by cavily, pak artillery and tanks, being shaped for carrying in a 'bucket.' The gun is kd by a continuous metallic strip, and the method of locking the breech is prouler to this type of gun, embodying, as t doe the 'interrupted thread' prin Cipic cooling is effected by the use of a thick barrel with few but large, radiating rings 11c weight of the H G. is 31 lb. of without mounting, 27 lb. It automs ally fires 400 rounds a min, and is onling is effected by the use of a mide in light and heavy forms. It was the datter its Amer inventor, Benjamin fericle. Hotchits (1826 8), an em-ployed in a gun factory during the Amer Cn I nai

I he object of the H. clause, Hotchpot. which is inserted by conveyancers in all Lurinage settlements, is to ensure that none of the vounger children of the mar of the voltage tentart of the that is a sum out of the portions' fund during their father's lifetime shall be able to claim a further shir it his death in the sum remaining for his among all the voltage children is thout hist bringing into account the sum or sums advanced. Power is usually expreshy given in the attlement to the territ for his under the settled Land A to declare on making an advance, or appointment' as it is termed, that the it appointed shall not be brought into Il when power is of use where it is the way of the tenant for life to divide the fund equally subject to a first charge in tiver of a particular child. Where a drive estate is by the terms of a will to be divided between the children of the test iter and a stranger, advancements do not have to be brought into H. so as to berefit the stranger

Hotel (F. hold, Ol /ostel, Lat. hospi-tile) superior kind of mn. It provides ledging and refreshment for travellers correll, and may be set up without a licence, unless the proprietor sells excisable liquors, an that case a licence unstable becomes Amanda per is bound to provide for any one will applies to him, and may not refuse eather ledging or refreshing that nent, unless the applicant is tainted by disease or drunk, but, on the other hand, a traveller cannot select what rooms he chooses, and if he will not accept the ac-commodation offered him, the proprietor need not oblige him at all. Then, again, His blood (see Transults an matton). a proprietor can a tun any of the property The celebrant breaks the H. into two of his guest if he indu to pay his account

person, the residence of a make, and tester a piace where people were lodged and test at a fixed price. The modern Fr word is still used for the house of a rich man, or for a public building, e.g. Hôtel de Ville is the tn. hall, and Hôtel de Dieu is

But the innkeeper is liable for the loss of his visitors' property within the II to the value of £30, unless it can be proved that his guest was at fault. The word II has different meanings. In France it origin ally meant the meansion of a distinguished person, then the residence of a maire, and lister a place where people were lodged and lishes annually to its members who number fed at a fixed price. The modern Fr. ments I he A A also affixes its sign to many He on the Continent, where pro-gress in baths and sanitation have been the name given to the prin hospital in any made in late years, especially in It Hs, Fr. tn., the Hôtel des Invalides in Paris is where up to date sanitary appliances were



Ju n II S

THE BRITISH RAILWAYS HOTEL AT MOLI AMBL. I ANGASHIRF

The hotel is constructed of , itt ring white concrete pelished like marble and relieved by the blue tones in the architraves of the win lows. There is bliggreen glazing on the und raides of the projecting ledges, the hoods of the ballonies and the ceilings of the Lighas. The archit of Oliver Hill designed also the interior decoration fittings and turn it are thus on using a continuity of theme through it

a famous military hospital and soldiers home, founded in 1670, whi h contains the tomb of Napoleon The modern H dates from the formation of railways and is a palatial dwelling in comparison with the old fashioned inn The nodern Ha one oid nationed inn. The nodern He contain telegraph, poet, and telephone offices, as well as reception reading, smoking, and writing rooms drawing rooms, lounger, comfortable telephone, and sitting rooms. Somewhat restrictive conditions still brands the devicement and sitting rooms somewhat restrictive conditions still impede the development of Hs in Great Britain, though their importance as earners of foreign exchange, through overseas tourists, is becoming in creasingly recognised by the gov and the country in general With this in mind, everything possible is being done by managements to maintain and improve their standards of comfort and service In America a fixed charge used to be made In America a fixed charge used to be made for board and lodging, but now as in the lifth Avenue H of New York, built Europe H proprietors generally make a charge for the accommodation and an European visitors, but magnificent new Additional one for each meal taken in the lis have now been built in the loading H. The Automobile Association has con-

imported from Lugland after the First Worll War In general Swiss Dutch Ger Scandinsvian and most Brit Ha can be relect upon for scrupulous chanliness. In Ladon the once famous H. Cecil in the an La don the oncommons it cell in the stant which used to be a renderous of nobility and of wealthy Amers was dismantled to make room for new offices, consequence, possibly, of the gradual concentration of so and life in the W. Ind. The Savoy H still continues to entertain a distinguished clientile. In April 1931 a distinguished clientile In April 1931 the palatial Dorchester II was opened in Park I and under the man sament of Sir I rancis Towle The Borkeley H in Pugadilly London modernised in 1930 makes a feature of being completely noise proof and air conditioned. The Queen's proof and air conditioned. The Queen's H, I ceds completed in 1931, has a completely regulated ventilating system, pletely regulated ventilating system, claiming to be noise proof in America the lifth Avanue H of New York, built in 1859 was famed as a resort for eminent of sky-scraper size, the New Yorker being forty-four steries high. H. development has proceeded at a great pace throughout the U.S.A., there being no important city which does not now possess one or more yeart Hs. ten or more stories in height. In the latest and finest the custom is for each the description of the work that the custom is for each the collections of the work that we have the work that we have the work the w bedroom to have its own bath-room. See R. B. Ludy, Historic Hotels of the World, 1927.

Hotham, William, first Lord (1736-1813), Eng. naval officer. He entered the navy in 1718, in 1751 sailed to N. America, and ultimately served in the W. Indies. He took part in the defeuce of Sandy Hook and Ithodo Is. under Lord Howe. H.'s actions against the Fr. off Genoa and off Hvères (1795) were adversely criticised by Nelson in his letters. Hotham, Mount (alt. 6100 ft.), one of the highest peaks in the Barry range, Victoria, S. Australia, about 135 m. E.N.E. of Melbourne.

Hothouse describes a glazed and heated structure used in horticulture for growing plants out of season or in colder climates by allowing close control of temp., venti-lation and light to be exercised. Glazing lation and light to be exercised. Glazing extends to roof and all sides, and may be, with equal efficiency, of clear or semi-ob-cured hortic, glass. If a tenant's struc-ture, it must be unattached to ground, perture, it must be unattached to ground, permanent walls or buil laws, espuble of being dismantled and portable, but it may rest on a loose brick, not cemented, foundation. The three common types are: Span roof, ranging from the single span garden greenhouse to the many-panned commercial glasshouse, creeted with ridge running N. and S. to admit maximum sunlight; three-quarter span roof, preferably built adjoining a S.W. or S. wall; and the single span lean-to roof, similarly situated. The smallest economic size for equable heating is probably 12 ft. x 8 ft. Site must be sunny, on 12 ft. x 8 ft. Site must be sunny, on well-drained soil, and foundations well-drained soll, and foundations draught-proof. Heating equipment depends upon the minimum winter temp, to be maintained. Tropical or semi-tropical plants and vegetables require much higher temps, than temporate flowers such as primulas. A house in which the night temp, in winter does not full below 10° F. in the severest weather is termed a cool greenhouse. It is suitable for the raising of such plants as alonson, begonia, cal-ceolaria, carnations, celosia, cheruria, colous, cyclamen, diasca, francoa, gerbera, coleus, cyclainen, diased, francon, gerberg, glozinia, grevillea, petunia, rhodanthe, schizanthus, streptcorpus, swect pes, verbena, zinnia, ctc., from seed; chrysanthemum, coleus, cytisus, fuchsia, hydrangea, oleander, pelargonium, plumbago, salvia, and solanum from cuttings; and most bulb species from corms or offsets. A warm or stove house is one in which a minimum winter temp. of 60° F. be forced, vegetables grown out of season, and plants raised from seed or cuttings for later planting out of doors. The range of tender flowers that can be grown include achimene, allamanda, amryliis, anthurium, bougainvilica, bouvardia, caladium, clerodendron, croton, dipladenia, his life in lecturing and writing.

fumeless oilstoves, gas or electrical ap-paratus. Gas and electrical heating offer the advantage of thermostatic control, but are seldom practical at an economic cost for the maintenance of forcing temps. The most economic heating equipment conrists of hot water or steam pipes extending along the sides, etc., of the house, together with a furnace or slow-combustion stove. This may be oil or gas-fired, but solid fuel, coke or anthracite, is most economical today. Techniques of soil-warming by electric cable or wire may be utilised with advantage in most houses. The aim of ventilation is to change the air without draughts. Roof ventilators are essential. Stage ventilation at the side of a house is rarely needed in winter, but helpful in summer. Sub-stage ventilators admitting air on to heating pipes are good for winter use. A constant water supply is essential in 114., and may be arranged by gutters and pipes draining into a lidded cistern sunk to floor level inside the structure. Modern houses of steel, aluminium or alloy construction are less costly to maintain than wooden, but care should be taken to see that facilities for supporting plants by training wires or strings are provided. by training wires or strings are provided. Whether grown in pots, boxes, or borders. H.-grown plants require well-balanced, fertile soils. Making up of soil composts for seed-growing and potting is simplified by use of formulæ developed by John Innes Hortic. Institution, Merton Park, London, S.W. 20. Freedom from soil-borne plant parasites, fungal or insect, is assured by soil sterilisation, preferably by heat or the use of a 2 per cent solution of heat, or the use of a 2 per cent solution of formaldehyde. Proper regulation of temp., ventilation and watering assure maintenance of buoyant atmosphere. ance of buoyant atmosphere. Watering should be done early in the day to ensure plant foliage being dry when the house is closed at night. Insect control has been revolutionised by the development of new smoke generators. D.D.T. smoke controls adult white-fly, tomato moth caterpullars, woodlice, and capsids. Azobenzene Smokes eliminate red suider Azelnet Smokes eliminate red spider. Against aphides, thrips, and scale, nicotine is most effective. Mildews, teaf mould and other fungus diseases require the use of sulphur or copper fungicides. Plants vary in their tolerance of smoke or fundgating treatments, and this should be ascertained beforehand. See F. J. Fletcher, Class-houses and Propagation of Plants, 1948. Hotin, see KHOTIN.

Hot Lake, dist. in the N. is. of New Zealand, stretching S.W. from the bay of

Plenty, and containing hot springs, gevers, and active volcanoes.

Hotman, François (1524-90), Fr. publicist and jurist, of Slesian origin, b. at Paris, son of a counsellor of the parliament of Paris. Studied law and began to practice at the Paris har, but thereafter spent tise at the Paris bar, but thereafter spent

first let turer in Roman law at Paris Univ. Having embraced Calvinism he went to Geneva and thence to Lausanne, where he Geneva and thence to Lausanne, where he was prof of belies-lettres. From 1550 for some years he lectured at Strasbourg and then attached himself to Anton, of Navarre, boing entrusted with missions from the Huguenots to German princes. He succeeded Jacques de Cujis (9 r) at Bourges, but the civil war drove him into flight, to Orie was whence he was sent to Blois to arraise the peace of 1568—life suffered greatly during the Huguenot per secutions and again sought refuge, this time. secutions and again sought retuge, this time at Sancerre, where he wrote has a work drawn from the hible and stangustine. After the massure of st. Bartholomey he field to General and turned his back on France forever, having written his famous Lat political treatise, the Franco Gallia (1573, trans. 1774) At Geneva he was appointed prof. of Roman news are was appointed provide that have but he never found peace and event pally, in 189, he fied to Basel, where he died and was buried in the cathedral there. His prin, work, the I rane stalling doubtless aimed at Charles IX, was nover no pulsar with his to relicents and was popular with his co-religionists and was also much censured by the Catholics In it he represents the institutions that the Huguenot party demanded as being those which for long governed lines, and which alone could retrieve her prosperity According to H, these ale il institutions could be traced to the listory of Gaul and the old Frankish monachy and to the later federation of free states formed by the peoples of Gaul in (can a time, under the peoples of Gaut in C can if the the the agencial Assembly of cletted deputies—a federation which, after the Conquest of Gaul by the Franks, was replaced by an elective monarchy, beginning with Childric in which the king could be deposed by the States-General composed of nobles. magistrates, merchanty and artisans, the clergy forming no order and exercising no power. This work breathed the true spirit of research and of Hugue not independence, and the sensation it caus d has been compared to that produced by the Contral Social of Rousseau II was a man of unquestion able piets and lotty ideas on a ligion, and his frequent tights, which a nebt seem to savour of cowardice, were really due to fears for his wife and family. His other works included the letterhomen worse included the 19th Primater (1867) a treatise to show that he have could not no founded on the inlan, a Treatise on the Eucharret (1911) I I she of Coligny (1 7) and main works on law and politica

Hot Springs, city and the o seat of Garland (o, Arkansas, I > I in the Coark tills, to m W > W of lattle Rock It is situated by a narrow valley and con tains about forty four miner a springs which are famous as cures for chronic diswhich are follows as cities for the first and neuralgia. Their temp ranges from 76° to 160° F, and the daily output: about 1,000,000 gallons. They are all contained in a reservation which has been neurasia inei temp ranges ir in 70 to 160° F, and the daily output 12 about 1,000,000 gallons. They are all contained in a reservation which has been held since 1903 by the U.S.A gov, which maintains here a naval and military hospital and a free bath-house. Lead and silver are found here, also fine olistone.

There are smelters and saw and planing mills, also ostrich and alligator farms Here was hold the United Nations Conferrice on bood and Agriculture, in May, 1943, 3s a tesuit of which an interint commission was estab, which formulated the constitution of the Lord, and Arneulture Organization (I A O) of the United Nations (see further under Pood and Agriculture Organization) Pop 22 000

Hotspur, no ne applied to Henry Percy, son of the first curl of Northumberland In the cogn of Henry IV II and his father gailed the great victory of Homil don Bill (1402) He coned with Owen II and his don Hill (1402) Ho joined with Owen

on the latter the king, but we skilled in the buttle of Shrewsbury (1105)

Hottentot, native the of Shrika so called probably from their jubiting or unintell gible chitter. The HS regener. ally supposed to represent a maxim-



HOTELNIOUS

stocks in which the Bushman and Hamite

the H race, and can be distinguished by their vellowish brown complexion, oblique brown eyes, prominent check bones, pointed chm, broad fit nose, and black woolly hair They are essentially a woolly hair They are essentially a pastoral people owning long horned cattle and fut tailed shoop, whereas the Brish men live exclusively by the chase, and their national garb is the 'kanoss,' or sheep-kin, worn with the weelly side out in summer and reversed in winter. They have a particular form of clan organisation and follow a cult of sured fire which is thought to be a Hamilio tract. Their huts are frail structures of matting which can be carried from one company ground to another—they are a singulah, indolent formular interest to the state of them lead a nomadic life. Most of the tribes have been converted by I rotestant mission arise but und r the outward form of the state water and surjections sur Christianity many old superstitions survive, and the Heitzi Libib' or Great Spirit, is still alternately rewarded with offerings or overwhelmed with in the dictions according as he shows himself propitions of he tile to the community Hs hi e the lashmen speak the kholsan languages Though the Hottentot has Hamilic features, the closest relationship appears to be with the Bushman though that with the latter is as I st remote. The numbers using these languages are few (there are le - than 20 000 surviving Bushmen) in I although the Nama variety of the H linguage is spoken by 50 000 people it is progressively being replaced by Afrik ans the H languages, of which only Nami and Korina are now spoken have been the subject of much research especially by the students. Hospetch is highly developed possessing very delicately graduated series of vowels and diplathongs in line the Indo Chinese has tones by which interest meanings are imparted to the same word. There is also an accusative case indicated by endings in the ingular dual and plurar and gender is marke t by distinct termination for the musculing femining and neuter of all three numbers the H pop was regarded from the beginning of the nine teenth century manify as a source of labour to replace the labour lost on the abolition of the slav trade a ien tribos retained then tribil organisation for some tune, but the ils were gradually absorbed as wage earners into the economy created by the spread of I mope in farming and they retained neither a separate ter nor they retained neither a separate ter nor a distinct existence as a community. See F. A. Walker i History of South Africa 1928. J. Schapera The Khorson Peoples of South Africa 1930. Lord Hulley, An African Survey, 1938.

Hottentots Bread, see Diosconi ACEAT

where the gov trout hatchery is.

Houbraken, Jacob (1698-1780), Dutch | 1919
engraver, son of Arnold H. (1660-1719) | Houghton-le-S
at Dordrecht He particularly excelled in portraits and it has been said that no one has ever equalled him in the manner contains the tomb of Bernard Gilpin, the

of imitating the flosh and hair by means of the graver He pub in London (1743-52) Head, of Illustrians Persons of Great Britam, with lives by Dr Birch, Houdeng-Almeries and Houdeng-Goeg-

nies, t vo adjudning the in Hainaut, Bel-gium 1) m E of Mone There are im portant coal mines The chief in The chief industries In the neighbourhood is the first large hydraulic lift f rily vessels, constructed to counter at the difference of level of two arms of the (anal du Centre Pop. 7,600 ang 4 200 respectively

Houdin, Robert (1805-71), see under CONTURING

Houdon, Jean Antoine (1741-1828) Fr scuptor b at Versuilles in 1751 he won In 17 11 he won the Irix de Rome, and went to Italy if re he rem uned ten years, and executed the lift size figure of St. Bruno, of which i pe (lement NIV and that it would speak hid not the rules of its order enforce silence. On his return to I rance he was men d into the Academy, becoming a member in 17% In 178, he visited ingten indeed it was in portraiture that he vis especially successful—some of his nixt famous busts are those of Turgot, R us cau, Lainyctt, Anabeau, Napoleon, Milie Arnauld, and Mohere See H Dietks Houdons Leben und Herk, 1887, If successful, 1e Statuare, J. A. Houdon et sin epioque, 1918—1) and monographs us; I ke au 1930 and I Maillard, 1931 Houghton in Houghton co, Michihe via especially successful Some of his

Houghton to in Houghton co, Michigan Un A on the nucle of Portage Ite, bout 68 m NW of Marquette It is, bout 63 m N W of Marquette It is the centre of the great copper pro-duing diet of kewennaw There is a stip canal to Lake Superior and a stanier Michigan College of Mining onnection in l lechnology is situated here. Besides copier inning, lumbering and igric, are also cirried on Pop 3757

Hou, hton, Marque of, see CRFWL,

LALI OF. Houghton, Richard Monckton Milnes, br t Baron (1809-55) was an example of if he t type of man about in At Cambrige he moved in the literary set and become intimate with Thackers, Fennysor and Brookfeld which friendships in lured through life later in life he to mided the Philof it lon Society, and was dwave in the van of an h movements as n chinics' institutes, frinchise, and the t of some distinction an excellent after t mor speaker gifted with an incisive wit. was very popular in society, and he entertained largely both at Fryston and at his London house. He ed Keates Life n t letters (1818) and ed a collection of h - poems in 1863 and again in 1876 He

Houghton-le-Spring, the 6 m. N.E. of Durham, England There are collieries and iron-works The anct. church here

Hougoumont, vil. near Waterloo, in Belgium, and the scene of most of the critical righting in the Battle of Waterloo. Together with its grounds it was in the occupation of the Brit. troops when Napoleon opened battle. Defended by the Eng. guards, it remained untaken throughout the battle.

throughout the nature.

Hougue, La, see HOGUE.
Houlton, th. in Maine, U.S.A., in the co. of Aroustook, about 98 m. from Bangor. Lumbering and farming are mainly on the land on the second or the seco 7000.

Houms, co. seat of Terrebonne par Louistana, U.S.A., about 50 m. S.W. of New Orleans. There are sugar, rice, and

Louisians. New Orleans. There was supplied to dogs of the chase which hunt by scent alone, such as bloodhounds, foxhounds, staghounds, beagles, and harriers. Deerhounds and greyhounds, which run by sight alone, are not, strictly speaking,

Hound, par. and vil., Hampshire, England, on Southampton Water, i m. from Netley station. It contains an Early Eng. church and the Royal Military Hospital. Pop. 3714.

Hospital. Pop. 3/14.
Hound's-tongue, name given to various species of the boraginaceous genus Cynogloseum. The plants grow in tropical and temperate lands, and two grow cai and temperate lands, and two grow wild in Britain. Of these the better-known is C. officinale, the common if., which grows on waste ground, and was formerly used in medicine. It grows to a height of 2 ft., has downy leaves, and bears red flowers.

Hounslow, tn. in Middlesex, which stands at the junction of the two great W. of England roads from Bath and Exeter, and is about 14 m. from London and 24 m. from Brentford. H. Heath, W. of the tn. was the site of Rom. and Brit camps, and was also a favourite resort of highwaymen. It is now used as an exercise ground for troops. From 1918 it was the continental air port for London till this was transferred to Croydon in 1920. The large cavalry barracks built in 1793 is the chief military depôt for Middlesex. A priory of friars of the Holy Trinity was founded at H. in 1296, and the chapel was used as a church

until 1330, after which the present church of the Holy Trinity was built. H. is now part of Heston—Isleworth. Pop. 23,600. Hour, twenty-fourth part of a day. In most countries the Hs. are counted from midnight, and two twelves are reckoned. but in certain parts of Italy twenty-four out in certain parts of Italy twenty-four Hs. are counted, beginning with sunset, so that noon and midnight occur at different times each day. The 23-H. mode of reckoning 1: used in the Brit. Army. Whitaker's Almanack, etc., e.g., 12.5 A.M. is reckoned as 0005 H., 11.50 r.M. as 2350 Hs. kach H. is divided into 60 mins. and each min. into 60 secs. Many nations e.g. Gka. Jews and Habytonians were not

'Apostle of the North,' who was rector into equal parts, but into unequal or here, and also founded the grammar planetary Hs., and double Hs. of 120 min. school. Pop. 28,100.

Hour-angle, angle made by any H.-circle with the meridian of the observer. For example, when the sundial at a certain spot registers ten o'clock in the morning, and the sun is therefore two hrs. distant from the meridian, the hr.-circle makes an angle of 30° with the meridian. Hour-circle, in astronomy, any great circle drawn through the poles. The fixed

stars complete their apparent revolution round the earth in twenty-four hrs. of sidereal time, passing through 360° in suceren time, passing through 360° in twenty-four hrs., i.e. in 15° one hr. If, therefore, two observers are 15° of long, from each other, one has any fixed star one hour of sidereal time later in his merdian than the other. Meridians in dialing are known as 11°.

dialing are known as Hs.

Hour-glass, instrument for measuring intervals of time which consists of two glass bulbs joined by a narrow neck. One of the bulbs is almost filled with sand or mercury, which passes through the narrow aperture to the other bulb in the space of an hr. if an H., or of a min. if a min. glass. This device was frequently employed in churches during the sixteenth and seventeenth centuries, and in the Fing. House of Commons, as a preliminary to a div., a two-min, sand-glass is still turned.

Houri, name for a beautiful damsel endowed with perpetual youth, whose companion-hip in Paradice is the reward of devout Moslems after death. The word comes from the Persian huri; Arabian

haura, a black-eyed virgin.
Hours and Wages, see LABOUR, HOURS AND WAGES OF.

Housatonic, riv. (length 150 m.), New England, U.S.A., rises in Berkshire co., Massachusetts, and flows generally S.

through Connecticut, enters Long Is. Sound I m. E. of Bridgeport.
House, Edward Mandell (1858-1938), friend and adviser of President Woodrow Wilson, was b. at Houston, Texas, U.S.A. He was the son of an Englishman who emigrated to Texas when that ter, was still part of Mexico, and who took a large part in lighting Mexico. He was educated at Cornell Univ., and then returned to his native state, where he made a comfortable fortune from his plantations and other business ventures. Although he never ran for office himself, he took a keen interest in the politics of Texas, and was largely instrumental in the nomination largely instrumental in the nomination and election of a number of its governors and senators. II, was a progressive Democrat. When Woodrow Wilson was prominently mentioned for the Democratic nomination for the Presidency in 1912, II, paid a visit to the then governor of New Jersey. The two man found that they thought alike on public questions and policies, and a friendship was begun which was to lest without a break until which was to last without a break until the closing months of Wilson's life. When with the crossing months of whom after. When is reckoned as 0005 H. 11.50 F.M. as 2350 Hs. Each H. is divided into 60 mins, and each min, into 60 secs. Many nations and each min, into 60 secs. Many nations could have had almost any position that the President could bestow, the course of the course of the course of the President of the Curope for accustomed to divide their day and night the President. He had interviews with

most of the rulers and leading statesmen of the Old World—a practice followed by President Roosevelt in 1940 and 1941. In 1915 H. again went to Europe to be the eyes and ears of the President, and, particularly, to study the possibility of Wilson acting as mediator between the warring nations. Whon America entered the war in 1817 H. once more went to Furnous as chief 1917, H. once more went to Europe as chief of the mission to study means of fulfilling

before 1700 B.C. Hs., of two or three storeys with stairs to the upper rooms; the ground floor rooms obtained light only through the doors, the upper floors were lit by windows. The rooms were rect-angular, the roofs flat. This is the S. type of H. In Greece, in very early times, the H. was of circular form. It passed through many changes to a rectangular formation in which the circular form is Allied war needs. He then became a member of the Allied War Council, and when the creased in width, central columns were



John H. Stone

STOKESAY CASTLE, SHROPSHIRE

Powers met at Versailles to draft the Peace Treaty, Wilson named H. as one of the Amer. peace commissioners. As such he took a considerable part in drafting the he took a considerable part in draiting the League of Nations covenant. One of the most fascinating books on Europe and America just before, during and after the war is The Intimate Papers of Colonel House, ed. by Prof. C. Seymour, 1926-28. See A. D. Howden Smith, The Real Colonel House, 1918.

House, term used for a building erected for habitation. It therefore includes dwellings of any size from a single-proper.

dwellings of any size, from a single-room building to a palace. Hs. set the architectural type of the epoch. The early Egyptians lived mostly out of doors, and their dwellings were of wood or crude brick. Their smallest Hs. consisted of single rooms. Their larger Hs. had outer

added. The roofs were pitched. The accommodation consisted of a porch, a accommodation consisted of a porch, a megaron with a hearth, and sometimes a further sleeping chamber. The Hs. in Greece were of the N. type. The later dwellings of the Gks. were plain and unpretentious; the rooms faced inwards and round an internal courtyard, the Hs. were of one story, and the light was admitted through the doorways. They were frequently surrounded on the outer walls by shops. In Rome, the accommo-dation was similar to that of Hs. in Greece, the rooms being round an interior court with a peristyle: light was admitted through the doorways, and the ceilings and roots were of wood. The buildings were one storey in height to withstand earthquake. This type was called domus. There were also insulae, or tenements of and inner courts surrounded by porticoes, sev. floors, similar in plan on each floor, halls, and chambers for the family, guests built of concrete with brick facings. The and servants. The ground plans only rooms were barrel vaulted and the walls remain. At Cnoesus the Crotans built, plastered. The floors were covered with sev. floors, similar in plan on each floor, built of concrete with brick facings. The

mosaic. The rooms were lit by windows. mosaic. The rooms were at by windows. They had staircases to the upper floors from the street, as at SS. Giovanni e Paolo, Rome. There were, jurther, villas as that of Hadren at Tvoli, and palaces as that of Plocletan at Rome. The accommodation was semi-public The Rome built Ha. in England, official but these, being of the 5 type, appear to

have had no influence upon the Eng. H.
Between the Rom, occupation and the
Norman Conquest the buildings in Eng-land were of wood. With few exceptions there was no permanent building until fifty years after the Conquest. The castles of the Conqueror were of wood surounded by earthworks In the twelith century stone superseded wood, and the stone H. probably embodied the same accommodation as its wooden fore runners. The keen was the domestic part of the castle, and the important room of the keep was the hall. The Hs. other than castles were still of wood. The keep was nearly always square, as in the case of the White Tower of the Tower of London, and Rochester Castle (1130) The walls were very thick, the rooms being badly lighted by a small window to each floor. There are two rooms to cach floor in Rochester Castle, and there is a chapel in the thickness of the walls, and a circular staircase communicates with each floor. The windows are small and unglazed; a wall fireplace heats the hell, the smoke being taken through the wall. In some case, the floors of the keep were of wood, in other, stone-vanited. The rooms were on top of each other, baser cut, hall, and attic. The kitchen was detached. Where defence was not the paramount consideration, the rooms were placed side by side upon the ground. The hall was still the prin. apartment of the H. and was used for living, eating and sleeping. This type, the fortified manor H, survived, and developed into the modern H. The and developed into the modern H. The keep type continued in such buildings as the Peel tower of the N and Lattersull (astle, Lincolnshire, and cls where until the mid-lifteenth century. The hall gave the name to the H. At on end of the hall was the kitchen, at the other the solar or master's room. The solar grew into the name of rooms for the family, the letters. -uite of rooms for the family, the kitchen into the domestic suite. In the manor type of H , the hre was in the centre of the ball, nearer the end used by the master of the H., the smoke was let out through louvres in the root. To increase the width of the hill, a row of columns was placed on our side or on both Glass was sometimes used in the windows in the mid thirteenth centur, but not generally until the tifteenth entury. In some cases the strength was detached from the H. Towards the end of the thirteenth century decoration and comfort were considered

Stokesav (astle, in Shropshire, built in 1940, is to-day a well-preserved thirteenth to carry a well-preserved thirteenth control carries and the control carries are put to different uses. In common with sev. other old houses, it was styled a 'castle' because show and stateliness was still further the tops of the walls and towers were realised. Rules of proportion produced

fitted with battlements—in other words, castellated—where as it was really only a fortified manor house. It is considered the finest oxample in England of an early hall. Well preserved S. Castle is defended by most, gatehouse, and tower 14 great hall was built in 1210 and the tower 50 years later, when the owner obtained his

teenes to crenellate, or fortift his home.
Haddon Hall is to day similar m plan
to what it was in the fourteenth contury. to what it was in the fourternth contury. It is grouped round an upper and lower county and the hall divides the two courts. The building is of the tortified type there are few windows; and it is in from the inner courts. The rooms communicate directly with one another, but privacy is assured by the use of screens. There are some rooms on the trist floor over the kitchen. The planning is wasteful. The windows are small. In this, Hs. were built side by side within the walls until the available space was utilized. By the close of the space was utilised. By the close of the fifteenth century, the need for tottifica-tion had passed Elizabethan plans of Ils, were more economical of material and their planning was more convenient. They were designed to produce offects (though there is some evidence of unnecessary towers eather). Towards the end of the sixteenth century the builders considered the symmetry of their electrions. During this century the greatest changes took place. The period concided with the Renaissance, which commenced in this country, in the reign of Henry VIII, with the dissolution of the monasteries, and the transfer of wealth from the Church to the Court. On the clevation the critical to the Court. On the clevation the cornice and pilester appear, and within the plan more privacy is provided by the use of corridors, as at Hengiave Hall, 1648. Tho subjects of Queen I Brabeth yied with each other in building large estabs. H type plan was evolved as letting in more air than the courtyard type. Windows became larger, chimners and fireplaces were more highly developed

In the seventeenth century the design of Hs became personal. The taste for the It tishion was gracified by Imgo Jones, Wien, and, later, Vanbrugh. In the coun-Wren, and, later, Wanbringh. If the country dists the old traditional type of plan and building continued. The design of Ha, now followed two lines. In the academic type, the position and use of the hall were slowly altered from that of a hving-room to that of an entrance. The ground floor was used for the day rooms, the upper floor for the sleeping rooms. The staircase became more central. Such windows were first employed. The chinneys colected into staks, and there were deriver. ierted into staks, and there were dormors as part of the roofs and not, as formerly, as part of the walls. The Cryl war district the development of building. Architecture became fashionable through books on the subject Castle Howard is the culmination of this period. It was built for display, and the outside wings are similar, though the rooms behind them

beautiful Hs. which were highly inconvenient The rooms were too lofty for comfort, though pleasing in appearance The kitchen balanced the stables, but both The Rivenon balance of the stanles, but non-were separated from the H by long colon-nades. There was some protest against this tendency, but usually the dictates of Andrea Palladio t. numphed, and Hs. lost comfort and gained stateliness. Some of the smaller is were more practically built. The in Il was developed on a narrow frontage faring on to squares and streets, repecting the same plan such by an the design of their elevations the such side in blocks and groups. With the mieteenth cutury, the growth of building increased with the pop and their migration from the country to the tar and cities. The people had to be housed their work. Little list in terraces the kitch is scaled to a contract and order in attention and cities.

ated with a ulpture. Baths and gymnasia ue provided in England, the modifica-tion of the building regulations to allow of artificial ventilation of bathrooms will affect the future planning of flats and Hs On the Continent there are Hs, built to start the phrase's machine to live in as the definition of a H. This tendency has hid some influence on recent king planung

I rom the middle of the numeteenth century detached country Hs followed



Griman State Failways

A BLOCK OF ITATS IN GIRMANS, REPRESENTATIVE OF A TYPE WIDELY ADOPTED

with windows to one side only a common so the list wind with air national Bearth closet and pump Large villas have been improved, in 1 give 1 to vided Haware built round Regent Suct. In the country, the spectacular Pillidian H wis built side of the first with the forgotten to the forgotten for the forgotten for the sound instance of the forgotten for t bined with a classi than in others as at Fontbill, it was a reversion to madies it ideas but with an attempt at the drum the F features and ornuncit wire norpor

ated in sev. Hs. In 1801, Lord Smallesbury called atten tion to the condition of overcrow line no London In some localities there were t more than eighty Hs to the in, with families in cach to in Lagislation wis emacted providing for the eccion of lodging-Hs, subsidied out of the poor rates Other Acts followed They did not produce the desired effect. In 1890 not produce the desired effect. In 1890 the London to Council bean to det with the problem. They built flats, the more recent of which are fixe floors high three floors of flats and the fourth and lifth floors two storey tenements. Con fith floors two storey tenements. Con tinental countries have adopted flats,

partnessing, and enjays es the import unce of structure the buildings are winden framed and derived from Eng ources the small 1 being wooden examples of his cottages in the ighteenth century they because forms being wooden tages in the m plan, based upon the palladish etyle copied and adapted from books by hig writers. This type and period are called toorgan Colonial. The early Republican Il show ir indu nees Oval tooms are found, the communication within the H is carefully studied the bedrooms being criticed through so tate doors. In New York there are IIs of the oughteenth oen tury with Dutch chuacteristics, notably covered verandas. In the S. Sp. types prevail, the walls are thick, the buildings of one storey round open partos and the channeys outside in the N the plan-iro more compact, the chimneys inside the In Stockholm they are sometimes twelve it. With the opening of the nine teenth storeys high in Amsterdam are to eight century, romanticism influenced the destoreys. In Germany and Austria the sign of the American influenced the decords about the blocks of flats are decorded to the decord of the century the ideas found in all these periods

and areas have been exploited and develand areas navo been exploited and averaged oped. In general, modern Amer. H. plans have the living-room and the dining-room connected, the dining-room being reached from the kitchen and living-room only. The dining-room is usually small. only. The dining-room is usually small. The bedrooms are often without fire-places. In many Hs. the living-room contains the only fire-place, the Hs. being heated artificially. There is a tendency to place the living-room at the rear, garage and services towards the street. In New York, apartment Hs. of thirty-one stories, 380 ft. high, have been built. Indeed, with the difficulties of obtaining servants, the building of big modern apartment Hs. has been increased in Amer. cities.

Interior Deviration, General.—Electric lighting has led to considerable experiment in the interior decoration of Hs. Diffused, concealed, reflected, and strip lighting have all been used. Colour has been given to light by tinted glass screens and neon tubing. Walls are sometimes considered as toxture in order to break the even distribution of the light. Glass considered as toxture in order to break the even distribution of the light. Glass is used in ceilings; polished steel for foors. Mural painting has been revived. Colour is used for psychological ends. Glass in various colours and as mirrors is being largely employed. The room and its furnishing are being considered as an entity. Emotional and spectacular effects, rendered possible from the use of colour and form, are being successfully designed. The various rooms are being decorated to accord with the moods appropriate to their use. The walls, ceilings, windows and doors have all been treated with the same colour or shades as tending to homogeneity. The bathroom is being considered—cheerfulness being stimulated by coloured walls and fittings of various material—porcelain, ceramics, mosaic and paint. Glass and stainless steel have been tried as handrails and for various fittings. Built-in fittings are used in mest of the rooms of the H. in order to economiss space and simplify decoration by glung the room of the H. in order to economise space and simplify decoration by giving the room that greater unity which follows from the employment of the architect of the H. as the designer of its furniture. Mouldings have been reduced, and surfaces are less broken. Pictures are selected with greater care-for colour and design-their setting being considered, or designed for them. There is less ornament in Hs. and less provision for their display. Ornaments are selected for emotional effect. The psychologist and the scientist have been studied by the decorator in order to stimulation. studied by the decorator in order to stimulate health and pleasure. See also BUILDING; FLORAL DECORATION; HALL; HOUSING; MURAL DECORATION: WALL-PAPER. See J. A. Gotch, The English Home from Charles I to George IV, 1919; Sir R. Blomfield, A Short History of Itenaissance Architecture in England 1923; A. Richardson and H. Eberlain, The Smaller English House of the Later Itenaissance, 1925; W. Anderson and R. Spiers, The Architecture of Ancient Rome, 1927; The Architecture of Ancient Greece, 1927; T. Small and C. Woodbridge, Houses of the Ivren and Early Georgian

Periods, 1928; J. A. Gotch, The Growth of the English House, 1928; D. Harbron, Amphion, or the Nineteenth Century, 1930; N. Lioyd, A History of the English House, 1931; F. Yorke and F. Gibberd, The Modern Flat, 1937; F. Yorke, The Modern House in England, 1937; R. McGrath, Turentieth Century Houses, 1940; Victoria Sackville West, English Country Houses, 1945; R. Dutton, The English Interior, 1949.

Houseboat, riv. boat which is fitted with every convenience for habitation, i.e. has living, sleeping, and cooking apartmonts.

living, sleeping, and cooking apartments. In England these boats are found mainly In England these boats are found manny on the R. Thannes, and are only used as temporary housed by people making riv. excursions; but in the E. countries Hs. which very much resemble floating huts, are common on all the large rivs., and are used as permanent residences; indeed, many of the Chinoso, Burmese, etc., spend their whole lives on those floating craft.

Housebreaking, see under BURGLARY.
Housecraft. Term which includes not
only housewifery (q.v.) and cookery, but
which has wider implications, the scientific practice of H. being known as
'domestic science,' and including the
choice of a house, its furnishing and equipment, cleaning and care, and embracing
such subjects as cookery dietetics laure such subjects as cookery, dietetics, launsuch subjects as cookery, dietetics, laundry work, and home nursing. Teachers' training courses in II. may be taken at the Battersea Polytechnic; Berridge House, Hampetead (now under the National Societies Training College of Domestic Subjects); the National Training College of Domestic Subjects, Buckingham Palace Road, and King's College of Household and Social Science (Univ. of London), Campden Hill. In the provs., and abroad also, many schools and colleges provide full courses, and degrees are awarded in domestic science. Shorter courses of instruction in housecraft are given at various struction in housecraft are given at various polytechnics and schools of Domestic Science. The choice of a site for a house should

be considered in relationship to the soil, aspect, contour of the land, drainage facilities, and provision of water, gas and electricity; the plan of the house should be prepared with full regard to the facilities offered by the site. Choice of furnishings, largely a matter of individual taste, should, novertheless, have regard to a general colour scheme, walls, flor covering, curtains, and style of furniture having a relationship to each other. The kitchen is the workshop of the house and should receive special consideration, as the smooth running of the entire estab-depends largely upon its effolency. Labour-saving devices should be incor-porated as far as possible, not only in the kitchen, but in the other rooms of the house. These may include: built-in cup-boards and wardrobes: rounded corpors house. These may include: bunton cap-boards and wardrobes; rounded corners to facilitate cleaning; washable or tiled walls in kitchens and bathrooms; plain doors to cuphoards and rooms; hot and cold running water in the bedrooms; kitchen cabinets for the storage of dry goods and a hatchway unit between dining-room and kitchen; airing cupboards they pass the winter chiefly in the pupal for linen; stainless steel sink units with draining trays, cuphoards, etc.; stainless Household, Royal. The R. H. probmetal taps; bakelite or plastic electric ably had its origin in the commutatus des metal taps; Dakelite or plastic electric fittings; enamelled gas and electric cooking stoves; electric vacuum cleaners and floor polishers; electric washing and washing-up machines Information and advice on good household equipment can be obtained from The Good Housekeeping be obtained from The Good House keeping Institute, 28-30, Grosyenor Cardens, London, S.W. 1. See E. W. Gregory, The Art and Craft of Home-Making, 1922; E. E. Jardine, Housecraft, 1928; Pauline Griffin, Happy 19 the Bride, 1916, also Blackie's Domestic Science Handbooks including Simple Lessons on Health and Habits, Simple Lessons on Household Management, and The Chemistry of House craft.

House-duty, Inhabited, tax imposed on inhabited dwelling-houses of the annivalue of upwards of £20 in England, Wales and Scotland. Its incidence was on the legal occupier and not on the owner. There were numerous exemptions, such as houses helonging to the royal family, hospitals, alms houses, school buildings trade and business houses, and others. The duty ceased to be chargeable after 1923-24 (Finance vet 1924, Sect 20) House-fly, Flesh-ily, or klu ca domestica, name given to a species of dipterous

tica, name given to a species of dipterous insects belonging to the family Muscidiz.



1 White um Jores THE PROBOSCIS OF A HOUSE LLY

The two jointed probose is is shown, with the palps and the lips (labella) permeated by feeding tubes

These files are widely distributed and very numerous, especially in summer. The eggs are deposited on dung-heaps or similar places, and the larvæ feed on their surroundings until pupation, which takes place in a few days' time; at the end of a fortnight they are fully-developed winged insects. The chief characteristics are the sucking proboscis and the bristle-feathered antenne. Ils. are considered frequently to be agents in the spreading of disease:

Household, Royal. The R. H. probably had its origin in the commutus decribed by Tacitus which consisted of comites or companions who were the personal attendants of the Tentonic chieftain. In England before the Conquest the comites had been replaced by them, the chief of whom were the staller or hurse them and the bounches while or horse thegn and the bowerthegn, while in Normandy a similar arrangement had been estab, and each duke had his senes chal or steward, his chamberlain, and his constable. After the Conquest this ducal constable. After the Conquest this ducal household was reproduced in the R. H. of England The hist. of the R. H., however, is difficult to trace, as very few records concerning it are forthcoming. The Black Book of the Exchequer enumerates its offices in Henry II's reign, but gives no account of their function, and the Collection of Ordinances and Regulations for the Government of the Royal Mouchald made on Invest Proceedings. Household, made in Divers Reigns from I due to the top indeed, give some details about the court nuted, give some details about the court arrangements during the fifteenth and sixteenth centuries, and Chamberlayne's Presul State of England contains a catalogue of the officials at the court of Queen Anne, but no connected hist is forth coming. Be this as it may, the existing R II is essentially the same as that under the Ludges or Plantagencies and consists. the Indors or Plantagenets, and consists of three main depts. : the lord steward's dept (Board of Green Cloth), the lord chamberlain's Dept, and the master of the horse's Dept, which can rerhaus-clim the greatest antiquity. At the head claim the greatest antiquity. At the head of the first is the lord steward, who must always be a member of the gov and a pur and it is interesting to note that he still possesses a criminal jurisdiction such us was originally inherent in every head of a dept , indeed, all juri-diction relating to homicide in respect of the R. H. resides in him, and under his mandate alone can inquests be held or criminals be indicted and tried. Under him are the treasurer, the comptroller, the master of the house hold, the offices of the almonry, and the paymaster of the Household. At the he id of the second is the lord chamberlain, who must also be a member of the gov and a peor, and under him are the vice chamberlain, the master of the Cere-monies, whose duty it is to enforce the observance of the eliquette of the court, observance of the eliquette of the court, the gentleman usher of the Black Rod, the prin usher of the kingdom, the lords and grooms-in-waiting, who attend on the king in turn for all out three weeks at a time, the captain of the Corps of Gentlemen at-Arms, the captain of the king's bodyguard of the Yeomen of the Guard, the countralies and examiner of accounts the comptroller and examiner of accounts, the dean and the sub-dean of the Chapels Royal, the pages, the master of the king's nursic, the poet laureate, the royal physi-cians and surgeon, chaplains, painters, librarian, and musicians.

The Queen Consort's Household is also

in this dept and compuses a lord Cham- | care of the fabric and contents of a house, berlain, a treasurer, equery, and various ladies. These include the mistress of the robes, who attends the queen at all State functions and is the only lady of the Court who comes into office with the got, seven ladies of the bedchamber, who must be peereses seven women of the bedcham ber who appear only at Court functions and eight maids of honour, who as a rule are daughters or granddaughters of peers, and who in any cise have the right to pre ny honourable, to their names even if not entitled to do so by buth. The third dept has at its head the master of the Horse who also is a member of the gov He has charge of all matters connected with the horses and h u ds of the king and under him are the Croy i Figuria who practical v manages the roy i stubles and stud-the officers of the equering who are alway armed forces an I attend the king in turn like the lords and grooms in writing the pages of honour vouths who wait on the king at state eccumones. Besides the three depts mentioned there is its the Privy Purse Dept which cousts of the king's 'persound staff and includes the keeper of the privy purse and the privit-scretary. The civil 1 provides for the maintenance of the P it 114 8000 being granted for solarie and 1172,800 for expenses, besides a unit 1172,800 for expenses besides a monof clib,000 for their majested priva pure \$2,000 for works, \$13,200 for real bounts and \$8000 uneppropriatel

Household Troops at those whose second duty it is to grand the reading monarch and them trop his Ingregate two thonarch and the distance the cavalry length c ke al Horse Gunds and the life Gunds, an' ter funts the Grenadice Coldstream scots Irish and Weish Guards. See also for 11 ha

Housel, for many centuries the Linglish name for the Euchurst regarded as a strong current up to Slake persons stime () Slakes pare's unbousted, un meied) House-leek popular from a sen to The plants ar su culent, of (Tagsulic mi have star shaped flowers, and flour sh on the mts of Furope, Asia, it Africs plants, and hen cultivation r ulres little rouble as they thrive in the present sectorum the common H, triquently builted on the roots and wall of cottages to leep the acceptage to leep the accepta sir arrang dill rosettes, are that a und in colour are a creash green the flowers th fowers tion takes fin by offsets

In many 1 arts of Fugland and especially in Huntingdonshire, the H is planted on the roof of houses, in the win spread belief that it is on the roof the house will never out he fire

Housemaid's Knee, see K\11 House of Commons and House of Lords, Houses of Parliament, ser Parliament,

HOUSES OF

Housewifery, term defining activity of the wife in the home, and not confined to adapted to meet indiviousline housework, but embracing the can be considered here

care of the fabric and contents or a nouse, and the skill necessary to convert the house into a home—a happy home and a contented household being an important contribution, at all times, to the national life. The surroundings of a house are important it should, if possible, stand in a productive garden the rooms of the house should be so arranged as to admit the maximum of sum and all to those frequently used. Modern practice is for the quently used Modern practice is for the house to face S II or S W and not due S the kitchen, scullery, and laider should the North Bedrooms (an face \$ \Gamma, or \text{\$\sigma}\$) The ann of the modern house wife should be to attain satisfactory results within a reasonable time and with the minim im imount of physical labour, this can be whieved by acquiring a knowledge or, and using modern labour saving equipment as in as means permit (see also Hotsici (FI)

Good turniture should be regarded as an esecutial, but over furnishing should be there should be ample space in as orde 1 which to work and move about son it requirements vary, but a good rule is to buy only the essentials it possible from a well planned range of unit furni tur whi he can be put together like unit bei helve thus allowing for additional from the may be classified as utility circuilly and well designed and of pleasing projection non-wild traying standards of projection non-wild to the various dear hour greater and more individual. gen ally a good quality as far as material and wikm unship is concerned, but very off it of high for the modern house or rtique- invariably well made, but often un uitable for a modern house and dasaezten ire

Dans (13 anno - A certain amount of cleaning each day is a necessity, though aften, sould not be made at a thorough ansing of the entire house cach is it fictory result can be obtained div in are is a able time, and efforts should be made to attain a happy medium between interf two k and planning in oxh mist hener a more officiently accomplished if the feel wang order is observed bedrooms (bath 'n and levatory if on the first flor), landing, sturs, half, itsing room, kitchen and back premises. In blief, the wisk as from the top of the house down Dilly cleaning eneares that noth ing is overlooked (to become very dirty and thus demand excessive time, materials and ishour on its cleansing) and it gives an and thout on it cleaning and it gives an opportunity of Icoping all polished surface—flors mirrors, windows, etc—tright and duning, and generally to 'tidy up di the rooms Household routine should always be so planned that this daily cleaning is finished before the start of the general work of the day As vary-ing houses present their own problems, and even rooms of the same type demand special requirements, only general prin-ciples of daily cleaning which should be adapted to neet individual requirements

should be aired and the cleaning apparatus ready to hand a heginning should be made by cleaning the fire place and relay-ing the fire if a b droom is being cleaned, re making of the bed should be given first attention followed by the elecating of any fitted hand basin, and literwards the sweeping of the floor (or sweeper or ifterwards the vacuum ele incrover the triget) and sinas vacuum ele incrover the triget) and sinas work ing any small mats. The main work done the turnit ne lels ngs, door and window frames etc may be dusted in full bright surfaces polished with a pelishing and a map rubbed over any surrounds on the floor Lastly, polished surrounds on the floor the room should be gen a ally tidied. When all the household learning is completed the cleaning equipment and materials should be carcially packed away. Beds should be opened by removing all the bedelother and placing them over two chairs arching the mattress so that it may air the mat tress should be turned daily, from side to side and from head to foot alternately the beliter and p flows should be shaken bedelothes should be smooth and crosseless and the sheets tucked tightly under the mattices. Where it is pressible for two people to make the beds the work is halved and made much easier

In clean a pre-pl. The hearth right

In clean a pre plan The hearth rac should first be tolled up and the carpet turned back while the floor in front of the hearth should be covered with newspaper, | and the fender and are irons moved to one ande while the sent from the back of the moved it is advisable to save these cinders to the next fire but the ashes should be completely removed, preferably using for the purpose an old bucket lined with newspaper, which facilitates disposal in the dust bin the fire is laid by lightly crumpling newspaper on top of which dry sticks are placed crosswise, the cinders being placed at the back of the fireplace small pieces of coal at the front and larger pieces at either side limitly, any bright proces at either aid. Limilly, any bright surfaces should be polished, and the tilewashed before the replacement of the fire irons hearth ing and cupet and the refilling of the coal box

Io clean a pttcd hand hann and sur round,—The basin should be half filled with warm water in which the tooth gliss can be washed and then dried the glass shelf and its contents dusted, and the sur round to the bean, and the sorp wells wored. The basin should now be emp tred, rinsed and dried, and the taps rubbed up with a dry duster

Lo clean the laratory and huthroom —It is advisable first to sweep or mop over the floor, when the lavatory should be flushed and a little di-infectant spinkled. The bath should be wired over with a damp cloth, sprinkled with a little paradin, and afterwards rinsed, any stains upon the bath may be removed by subbing seap on the cloth and applying to the stains, while it will be found that unegar will remove any blue stains. (are is advisable in the use of abrasive substances when cleaning the bath, as these may tend to spoil the surface enamel. To complete the work.

all k dge - should be dusted and the window left open while if the weather permits, the towels and bath mats should be dried in the open air

WINKING -1 more thorough cleaning should be given to each part of the house, if possible it we kly intervals the order of work should generally, follow that wisked for daily cleaning, ex-cept that, after cleaning and relaying the in the wills should be swept, paint work on doors window sills and mantel plece cte, should be washed and the functure in I floor p h hed. Dust shocts should a ver furniture during the weekly clauming unless an electric cleaner is being used after use they should be carefully removed folded with the dusty side inside. tilen outside and shaken and packed the clocks should be moved as little as Where there are I ting is in progress bing numbers of books they should be the chee dusted and the whole covered with edust shoet

PRICIAL CIFANINGS TRING AND Si ng leaning should be this beet before il le to do without fires and when the we other permits, furniture bangings, car

t to may be put out into the garden ning and cleaning. The housewife hould plan carefully as much as can be ine call day without disorganising the ends and ensuring that the extra work to a not interfere with the preparation of or her meals in men bers of the family A decision should first be int horself m : le regarding inv necessity de corations and arrangements made for this work to be done, and it may be found that the chimneys require sweeping. Before the cleaning begins, the hou owife should be sure that there is a good supply of cleaning in iterals and that all the equipment is in s ood order, and a beginning may be con con order, and a bigining may be on conjudy cleaning all cupboards, drawers, they, etc., and by cleaning and storing away winter clothes, curtains, extra limbers, ciderdowrs, etc. It this con a ction it will be found that protection ig unst 1 joths is advisable Special work to be done during the spring cleaning in cludes the cleaning and if necessary pelishing of all pictures, ornaments, walls, a untwork, furniture, carpets and bed Plus tu

Order of Spring claning -Work should lern at the top of the house, cleaning in t those rooms which are least used I ndings, passage hall, and staircast in uld be cleaned after the rooms, and the kitchen and back promises last of all I lest to finish one room before beginning the next, and to keep the doors of rooms dready cleaned cloud

Special cleanings -A sick room should in kept scrupulously clean, and the fewer its contents the latter (see NUNSING— Home Nursing) he freplace should inst be cleaned, and the coal-box quietly rofiled. Before sweeping the floor all furniture should be drawn out from the

walls in order to remove any dust that has collected. Damp tea-leaves or sawdust should be sprinkled over the surface before sweeping is begun, as this prevents the dust from rising. If the floor is carpetcovered, a carpet-sweeper should be used daily, and furniture, ledges, dusted with a slightly damp cloth, finishing with a dry cloth. Fresh water should be given daily to flowers in the sick-room, and their removal at night.

Preparation for chimney-sweeping.—The sweep will expect to be told the exact date and time he is to attend, and to be in-formed of the number of chimners which will require his attention. Unless the sweep is using the new vacuum (or a similar) method, by which chimners may be swept without disturbing the room, the following preparations should be made: furniture should be covered with dustsheets or newspapers: curtains and the hearth-rug removed from the room; the carpet should be turned back from the fireplace and the floor covered with newspaper; the floor-space immediately near the fireplace should be well covered to allow the sweep space on which to rest his tools; the windows and door should be kept shut while sweeping is in progress. HOUSEHOLD CLEANING EQUIPMENT.—

Brooms and brushes, whether made from horse-hair, fibre, bass, bristle, or one of the various substitutes, should be washed when necessary, (a) soft brushes in warm soapy water, rinsed in clean warm water and dried in the open air; (b) stiff brushes in cold salt water, allowing 2 tablespoonfuls of salt to a bucket of water, rinsed in cold salted water. Care should be taken not to lean on a brush or allow the bristles to bend or break, and to remove all dust and fluff, after use, by shaking. Brooms and brushes should be hung up in a cupboard when not in use. Carpet sweepers operate by means of a revolving brush between two dustpans. These dustpans should be emptied daily, and all pieces of fluff, cotton, etc., may then be removed; it is possible for the entire instrument to be possible for the entire instrument to so cleaned by the housewife herself, and this may be done occasionally by unscrewing the bandle, removing the furniture guard, and taking out the revolving bush. The component parts may then be thoroughly cleaned and reassembled. Electric cleaners are an important part of the where electricity is cheap. The best-known types are the outside bag type, also known as the broom-handle type, such as the Hoover, etc., and the enclosed bag type, such as the Electrolux, etc. Kneeling mats are made from a variety

of different materials, and can be bought or improvised from a pad of old soft material. Step ladders long enough to allow the housewife to reach easily up to the top of cuphoards, etc., are extremely useful. There are many kinds, but the safety-ladder type should always be bought. Rack for brooms and brushes are

KITCHEN EQUIPMENT AND CLEANING. Glass cooking utenglis should be steeped in cold water if they have been used for milky or floury foods, and in hot water if used for greasy foods. They should be washed with hot soapy water, sode being added if the dishes are very greasy, and if very dirty they may be scoured with stool wool, a saucepan brush, or scourer, after-wards being rinsed and dried with a net cloth. Saucepans should be cleaned according to the surface material -- they may be obtained in various materials ranging from aluminum to enamel. Only the outsides and lids of saucepans should be polished, the pans being tilled with water immediately after use, hot water being used to remove groasy food and cold water to remove milky or floury foods. Saucepans should be cleaned as soon after use as possible, dried thoroughly, and kept uppossible, dried thoroughly, and kept upside down in an airy place. Enamel ware should be washed with warm soapy water, a fine cleaning powder being used it necessary, after which the articles should be rinsed and thoroughly dried. Care should be taken to avoid knocking the surface of chamel-ware articles, as this causes the enamel to crack, agreeing the causes the enamel to crack, exposing the foundation metal, which rusts on exposure to morture and air. Earthenware casscroles should be steeped in hot water if greasy, or in cold water if milky; they should then be washed in hot soapy water, using a sacepan brush, or scourer, and the outside may be cleaned with a fine clean-ing powder. The use of soda should be avoided, as this is apt to remove the glaze from the inner lining.

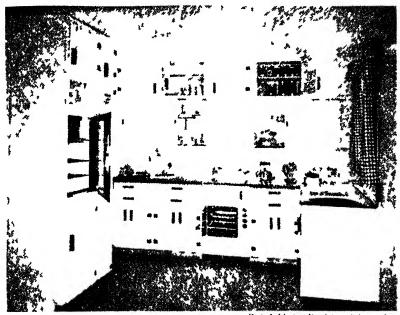
Baking and roasting tine should be steeped in hot soapy soda water, afterwards being washed in a further solution of hot soapy soda water. Stains may be removed by the use of a cleaning powder, after which the tins should be rinsed and after which the tins should be rinsed and dried in a warin place. Cake tins should be rubbed over whilst still warm with absorbent paper, but washing should be avoided unless this becomes absolutely necessary, when the tins may be treated as for baking and roasting tins. Frying pans should first be emptied by pouring the remaining fat into a small lar and reserving the future use after which the pan serving for future use, after which the pan should be whold with clean absorbent paper; washing with soap and water should be avoided, as this spoils the sur-face and tends to make food stick to the pan. Mincing machines after use should be taken apart so that all food may be removed with a fork, scraping if necessary, and afterwards washed in hot spapy water. After rinsing and drying with a net cloth the drying process may be advantageously completed by placing the minorr in a cool oven or on the plate rack.

China jugs or howls which have contained milky or floury foods should be rinsed with cold water, then filled with cold water and stood aside to soak; any pieces should be scraped off platos, which should then be washed in hot soapy water, extremely useful as they enable brooms, using a cotton mop; it is advisable to brushes, and other cleaning equipment bogin washing the cleanest things, fluishto be tidly stored. They can either be ing with the greasy china. After rinsing bought or improvised from odd materials.

Asphalt coment and concrete should be Aspirate towards and thrush and priod sauly swilled, after sweeping with cold water, the water being brushed towards the drain with an old stiff brush. Stone should be swept daily with a soft brush and if much used the first should be scrubbed with hot soda water after sweep

in the plate rack, with the exception of a soft brush and rubbed with a polishing cups, etc., which should be towel dried mop or two dusters, polish should not be FLOORS AND I LOOR COVERINGS— applied however, beneath carpets or rugs the wood or linoleum should be period ically washed with warm soap water, dried with a flooreloth after which pollsh may be applied (ork lineleum should be cleaned rach day as for polished wood Periodic ally the lineleum should be washed with warm scally wat r, but should not be scrubbed

Carpets and rugs should be cleaned



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British Lleitra De elopment Association

THE PLANNED LITCHEN

A design which shows continuous work space at a ant height direct I shing on the cooker and electric outlets for a nnecting p wer an i other labs avir, appliances when a y are needed. On the left is the refrig rat r at working h wit in t tile right a complete laun iry unit containing a the left is the reing it is a street in a fill a fill is a record it left the twater beat ril a fill is a ntat the foot f th mi bine I ot water at ligall us or by or 1 r the draining board supplying h twittt justs of the his

ing soap should not be used as this tends to make the floor slippers. As much water as possible should be it moved, using a floorcloth which has been well wrung out like should be swept daily and when necessary washed with hot some water ringed thoroughly, and dried with a floorcloth. They may be polished, but care should be taken not to

make the floor slippery Boards need to be swept daily, and have a periodic of rubbing after sweeping, with hot water and soap, afterwards being threed and dried with a flooroloth which has been well wrung out. Polished wood has been well wrung out of the polished wood and linoleum should be sweept daily with land carpet should be dried as far as possible for the polished with and water, but the latter should not be design and linoleum should be sweept daily with

fully either by gently sweeping or using a into ether by genty sweeping or using a part in the tweeper or vi uum cleaner, each v k as much furnit it as possible should be the convert from it is treet, which may it in be sprinkled with damp tea leaves it small pieces of dump newspaper and it converts breek to the production. ti roughly brushe i as much of the under si le of the carpet is is possible also being hand If very unity the carpet may be whiled, using wirm soapy water and a if neloth rinsing thoroughly with clean wirm water. A find rinse should be given with warm water an vinegar, or ammonia and water, but the latter should not be used if there is any blue in the design aible with a cloth and then either hung cleaned by washing with warm soapy in the open air, or left to dry indoors with water, using a soft cloth. After rinsing the doors and windows open to create a and drying it should be polished with draught. Matting requires cleaning daily furniture polish or cream. in the open air, or left to dry indoors with the doors and windows open to create a draught. Matting requires cleaning daily by sweeping, and may periodically be gently scrubbed with cold saited water on both sides, afterwards being rinsed and

dried in the open air.

dried in the open air.

WALL COVERINGS may be enamel, paint, tiles, wallpaper, or distemper. Thes may be cleaned with warm soapy water: wallpaper may be cleaned by removing the surface dust with a brush covered with a clean cloth, or with the vacuum cleaner, and especially dirty marks can be removed by the careful use of india rubber; varnushed or washable surfaces should be cleaned by removing the surface cost and washing the most soiled parts with tepid water and borax, allowing I tablespoonful of borax to one quart of water; distemper, or choir wash,

quart of water; distemper, or colour wish, may be cleaned with warm soapy water.
Wood.—A number of different woods may be used in a house in the flooring. furniture, fixtures, and donestic appli-ances. Wooden surfaces may be left be left smooth and plain, as is the case with pastry smooth and plain, as is the ease with pastry and draining boards, or they may be covered with some protective coating, such as paint, enamel, or stain, which may afterwards be varuished. Plain wooden surfaces are easily cleaned by scrubbing with hot soapy water, care being taken to scrub with the grain to avoid roughening the wood: the wood may be ening the wood; the wood may be carefully scraped with the grain, using carefully scraped with the grain, using an old knife, if particles adhere after scrub-bing; rinse in cold water, which helps to keep the wood a good colour, dry with a net cloth and finish drying in the open air if possible. Stains such as those made by if possible. Stains such as those made by meat, vegetables, parsley, etc., may be scrubbed off with plain cold water, or, if obdurate, they may be sprinkled with kitchen salt and then scrubbed; oil and grease usually yield to hot soapy water. Protected wooden surfaces should be dusted daily and rubbed hard with the duster to maintain the polish and occasionally washed with warm soapy water, using a soft nail brush for carved surfaces. Polished or varuished surfaces should be finished with furniture cream or polish. Paint on woodwork exposed to the outer air should not be washed with soapy water, as this tends to blister the paint, use being made instead of a mixture of parattin and water, allowing I tablespoonful of para-fin to half a bucket of warm water.

mn to had a ducket of warm water.

Fure-truer.—All furniture should be dusted or brushed daily, loose covers being straightened and well tucked in and cushions puffed up. Cane furniture may be cleaned by washing and rinsing with cold sait water, allowing, I tablespoonful dealt to tweeter or trater and drainst horse of salt to I quart of water, and drying thor-oughly in the open air. Wicker furniture should be washed with warm soapy water, using a soft cloth, and if very dirty a soft mail brush may be used. After riusing and drying the furniture may be polished with a liquid furniture polish. Drving in front of the fire should be avoided, as this causes the funture to creak. Leather and imitation leather cloth may be periodically

GLASS.—Flower glasses and bowls should be washed with warm soapy water. and howls using a soft nail brush if necessary; stains may be removed by placing a tablespoon-ful of salt in each ful of salt in each vase, covering with vine-gar and water, and allowing line vase to soak overnight, then washing in the usual way. Windows and mirrors should first be dusted, then rubbed with a pad of lightly-crushed newspaper, or tissue paper. Periodically the paint-work of the window trame should be cleaned, and then the window. Methylated spirit, or one of the commercial window-leaning liquids may be used instead of water to clean windowand mirrors. It is unwise to wash windows in frosty weather, or while the sun is shining directly on the window.

Mitals.—A number of metals are usually used in the ordinary house. Aluminium, chromium plate, cleetroplate, galvanised iron, lead, monel metal, pewter, stainless steel, ctc. Steel knives, tin and zinc, can be washed with hot soapy water, using a soft cloth, stains being removed by the use of a little fine cleaning powder. Steel wool can be used for removing stains from aluminium and pewter, and powdered bathbrick for re-moving stains from galvanised fron. Chromium plate, monel metal and stainless steel may be polished by rubbing with a dry duster; aluminium and tin by rub-bing with dry whiting and polishing with a duster; electroplate and silver by rubbing with whiting or polishing with a commercial plate preparation; galvanised iron, lead and zinc by rubbing with powdered bath-brick and paratiln, finishing with a dry duster; pewter as for solid silver; steel by rubbing thoroughly with dry steel wool or emerypaper and finishing

with a soft dry cloth.

BEDS AND BEDDING .-- Bedsteads should be made as plainly and simply as possible to allow for easy cleaning; a bedstead condits of a head board and a footboard. held upright by means of iron side bars, on which rests the wire mattress and the The design upholstered mattress. modern bedsteads is changing and the head and footboards are becoming lower and smaller; in some cases the footboard is omitted altogether. If both head and footboards are omitted, the bed then becomes a divan bed. Mattresses consist of wire links of different shapes, mounted in a metal frame; the upholstered mattress is soft and warm and covers the wire mattress; there are several types of filling for upholstered mattressed—horsohair, wool, flock, fibro, etc. There are also sev. varieties of mattress such as the spring mattress, which, as its name suggests, con-tains springs in addition to the filling; the box mattress, containing spiral springs and filling, etc. A wire mattress, unless made of stainless metal, should always be covered to prevent rust and stains being transferred to the upholstered mattress -covers can be made from clean sacking, hessian, or any piece of thick cotton

Pillous -The standard size is 20 in by 30 in and this should be remembered when buying pillow cases. The filling may be of buying pillow cases down or feathers, and the outer covering is made from a cotton meterial known as pillow ticking, a finer variety of mattress ticking. Bolsters are always filled with feathers and the outer covering is the same as for pillows

HOUSE HOLD LINE -In every house a special place should be set apart for the sife keeping of the household linen IΙι lmen cupboard should be dry and airy but not hot, as heat is hable to cause the linen to take on a yellow tinge. Linen should not be stored if it has been starched the shelves of the linen cupboard should be covered with clean white paper of with material such as old sheeting. A written li t (inventory) should be kept of all the line and it this is kept up to date it will assist the narranging replacements it will assist the natinging reperiories household linen or he marked by using marking into or by the use of woren names. Is use of the heavy initial cost of household here in the cost attached by the perfect condition for aslong as possible. The intended done by external manders, when two old to serve its capital in fiding reason is in receive and arcful using. When too old to serve its ough a purpose and inciding a no longer possible it should be cut lower and used. for other purpos

sufficient wishing materials at hand and ket all soil do the and best the water in the course as ide the clothes accord from the course their material -worldens, white it cottons and just colours to secolours. silks table in a unloughcloth 1015 41

only the very dirty parts of the materia ringo well and builting copper of water to a good lather appears. While the clothe are bolling wash the suke, then the woolling, beginning with those that are cleanest, in warm, capy water, keep the cleanest, in warm capy water keep the garments under the water whilst kneading and squeezing do not tub as the causes breakage of the fibres place any very dirty puts flut on the hand and rub the soapy lather across them (scrubbing re moves the scales from the woollen fibre and makes the fabre harsh), russ in two waters of approximately the same temp as the washing water It is unwise to write woollens and silks through the handsit is unwise to wring they should be squeezed to remove the bulk of the water, and then put through the wringer Peg on the line by the upper part of the garment Soak dusters,

material An upholstered mattress should Remove the cottons from the copper and always be kept clean by having a loose maghable cotton cover slipped over it a howl of water until the regultant liquid is just blue in the hollow of the hand, and dip in the cottons which do not need standing rut through the wringer and hing out to dry Wash the loose coloured cottons in the same manner as for wool-lens then wash the disters which have been soaking and any other rough cloths whi h may have been put with them in the put of soapy water when in doubt regard-me un material wash as for woollens

Storching -Starch Stiffens clothes and has the advantage of preserving their clanlines. Mix 2 tablespoonfuls of stirch in a bowl with 4 tablespoonfuls of cil with pour on boiling water, strring all the time until the mixture that and takes on a greyish tinge, to the all three times as much cold water - tar harture Starch the clothes by to the mount (as in the case of pillow to till the thopen ends in the thirt aconvency order for stach ing is (i) tray cloth (b) table cloths (c) t 1 nephins (d) cotton dresses (c) t 1 sand collins

I i f nr and r n nq — Only the the pit with warm water and researed to the iteritorial or cut to a stripe away in the community of the original of the control and spinish the water to be non-independent to the articles and d tob non land spinker the way.
I over them teld the articles and
fron lout roll up the temainder
this Pripate the tor other figures.

Ho is I ((8)) | The aim of the "th aundry it dies Prepare the how ewif an left thing home laundering in right like he prepare the should be to rend regiments linens its in the first the history of an ironing lean fir hard risp, without in any way of the line being should be used for damaging the thines in preparing for its said blouses. It is of paper without a should result there are in the right regiments with a think of the line to paper. if it is not tron hold a be red for the being te or neighbor that an old fells tekepting strigtle non be ing woolling strud be pressed on us le with a way a real double et and the shold be a med on both oven cloths, ct.

It's begin from much the lotton half to legether the white and fat to legether the white had fat to legether the source cottons using hot water and cultis with the coffin are nare some rub the solided puts well with the total the slowest some rub the solided puts well with the total the slowest some rub the solided puts well with the total half of the garment and b fe I mg ron the slea es, the top hall of the garment and I the cellar, f any Frabroiders I'b rond of I recess side, using 1 LESSINE

I ice impment required for home laun ig med only out the simplest kind, essentials being a tiper (heated by a csantials but z a Tput meases over a fine electricity of tas or a portable put which may be heated by a gas or even a primus stove), soft bristle thes, good fatty pup, a tubbing board, the iron (electrons, or the flat from a nimust be heated. however, on the arkt to assist the husewife, chief it must which is the clutto washing a chine, a valuable labour saving deviewhere the washing to the clutter of the clutt f ra large family has to be undertaken by tic housewife, ther are also commercial sup powders, bless ing powders, etc., all of which have their particular uses, and upper part of the garment Soak dustres, are sold with full instructions supplied by etc. in a pail of scapy water, leaving them the manufacturers, whose instructions in this while the other washing is done should be closely followed

MINOR ELECTRICAL FAULTS.—One of cluded in that environment the home the commonest electrical faults in the fitself. II. legislation up to 1890 was more or less ineffective. Then came the Act the switch is turned on. The bulb should of 1890, which was passed after the report first be tried in another socket to ascertain whether it is worn out or still operating; if the fault is not that of the bulb, the lampholder may need adjustment; or the flex at the plug and ceiling may be faulty. Fuses can be tested by switching on lights in the same circuit; if these are working the fault lies between the fuse box and the lamp; care should be taken to switch off all current before inspecting any electrical equipment—flex, lamp-holder, etc. It a fuse has blown, switch off at the main, pull out the fuse holders in turn from their flying clips until one carrying an incomplete (melted) wire, or only ends, is found. A dark stain caused by the combustion will probably be noted. The terminals of the holder should then be unscrewed to release the ends, and a length of new fuse wire inserted loosely connecting the two ends. It is important that fuse wire of the correct thickness be used. A supply of tuse wire both for lighting and power circuits should always be kept at hand.

Electric bells .-Common faults in battery-operated bell avstema usually arise from the batteries themselves. Leclanché type or wet cells consisting of a zinc element and a porous pot immersed in a solution of sal-ammoniae, should have the level of the liquid, if low, replenished with a solution consisting of toze, sal-ammoniae to 2 pints of clean water. Zincs which are nearly eaten through should be replaced. Replace dry cell batteries from time to time before they are quite worn out. (See also ELECTRIC BELLS AND ALARMS.)

See also COOKERY: DIET; DRESS-AKING; DRY-CLEANING; FURNITURE MAKING; DRY-CLEANING; FURNITURE,
POLISH; FOOD AND FEEDING; HEALTH;

POLISH; FOOD AND FEEDING; HEALTH; HEATING; HYGIENE; NURSING; SANITATION; PAINTING AND DECORATING. SEE E. Henney and J. Byett, Modern Home Laundrywork, 1934; A. Margaret Kave, A Student's Handbook of Housewifery, 1910, and A Shorter Course of Housewifery, 1946; Pauline Griffin, Happy is the Bride, 1946; Kathleen E. l'Ictcher, Housevifery, 1948; J. 4. Williams Home

Housewifery, 1948; J. G. Williams, Home Loundering, 1949. Housing. Less than fifty years ago the Housing. Less than fitty years ago the Statute Book contained no legislative enactment (beyond one or two ineffective Acts to enable local authorities to acquire labourers' lodging houses or artisans' dwellings) even purporting to deal at all comprehensively with the H. problem. That problem is the consequence of the in-That problem is the consequence of the intense industrialisation of England consequent on the development of machinery. Practically all the great manufacturing this, each with its squalid alleys and, slums, sprang up in the course of the last century. The Factory Acts (see Factory LEGISLATION) interfered with a one-sided freedom of contract by imposing on the employer the necessity of making the environment of factory workers less devices. vironment of factory workers less danger-ous and less insanitary. The H. of the Working Classes Acts, the first of which under that title was passed in 1890, in-

or less ineffective. Then came the Act of 1890, which was passed after the report of the Royal Commission on the H. of the Working Classes of 1884, to consolidate the Artisans' and Labourers' Dwelling Improvements Acts, 1875 to 1885, and other Acts. Compared with its predecessors, this Act was an ambitious piece of legislation, and many of its provisions for dealing with unlicatility areas and houses until for human habitation were reneated. unfit for human habitation were repeated in the consolidating Act of 1925. Burns's H. and Tn. Planning Act, 1909, was also an ambitious piece of legislation, and sought to improve the health of the people by raising the character of the house and home, and by extended inspection, super-vision, and direction of central control to help local authorities to do more than they could at this time. The Act of 1890, together with the Acts of 1903, 1909, and amending Acts up to 1909, contained powers sufficiently wide to enable effective action to be taken by local authorities who were prepared to act in spite of inherent difficulties. The consolidating legislation resulted in two chief measures from which local authorities derive their powers. These two Acts were the II. Act of 1925 and the Tn. Planning Act of the same year (as to the latter see under Town Planning). An Act passed in 1930 made further provision with respect to the clearance or improvement of unhealthy areas, and, in 1935, legislation was passed to prevent overcrowding. Practically the whole of the provisions of the H. Acts of 1927, 1930, and 1935 were repealed and re-enacted, with slight modifications,

in the codifying H. Act of 1936.
After the end of the war, Dr. Addison, as the first minister of health in the son, as the installment in augurated a new scheme under the H. (Additional Powers) Act, 1919 (to provide dwellings for returning soldiers—'homes for horoes'). The country was divided into eleven arous under H. Commissioners, and local authorities were encouraged to follow the lead. In brief, the scheme turned on an undertaking by the Exchequer to make good loses incurred under the Act, the authorities being responsible to the extent of a penny rate. As a result 214,000 houses were erected suitable for occupation by the working classes. Unfortunately an indirect result of the scheme was the rapid rise in costs, which moved in the case of a single three-bedroomed house from 6643 in 1917 to £888 in 1920, while London Co. Council houses at Rechampton rose to £1,750! Dr. Addison was suc-ceeded by Sir Alfred Mond (later, Lord Melchett), and in the same year the Geddos ancientt), and in the same year the treates Economy Committee pussed severe stric-ture upon the inaucial aspect of the scheme, and by Oct. 1922 the price had fallen to £346. The number of houses built under the Addison Scheme was 88,000 in 1921, 108,000 in 1922, 28,000 in 1923. Private building without State aid was increasing, however, reaching 58,000 was increasing, however, reaching 53,000 houses during the same year, and it appeared that soon local authorities might

became influster of health, and during the became initiator of iteatin, and during the vear his H Act was namportant Act in that it stabilised the logal position of II, gathering the errant threads from as far back as 1890, while the Tn Planuing Act did the same service for in planning—the in planning Part of for in planning—the in planning Part of Burns's Act, 1909, involved a material advance in the relations between the owners of land and the local authorities but the provisions of the Bill in its original form work greatly modified in the committee stage of its progress thice oninfitte stage of its progress. If the principles are insisted upon by the Acts (1) the power to compel local authorities to act. (2) the right of an owner to be informed of the proposals of the local authorities and to appeal to the Ministry of Health, and (3) the right of the owner to the content of the content of the owner to the content of the owner of the content of the owner owner to the content of the owner of the owner owner of the owner owner owner of the owner ow to compensation in certain cases where he is injuriously affected Part II of the li Act of 192) authorises the local authority to carry out Improvement Schemes for

dealing with unhealthy areas
This provision is repeated in the H
Act of 1930, is to improvement schemes already undertaken, but that Act makes no provise n for fut a improvement schemes, and would appear so concentrate on the more drastic plan of charance schemes, which involve demolition of all the buildings within the scheduled area (see infni). The Ministry may require the local authority to provide suitable ecommodation for persons of the working classes who may be displaced by the scheme. As to houses unfit for human habitation, the local authority must cause their dist to be inspected, and there is also a duty imposed on the medical officer of health to act on his own initiative, and if approached by local gov electors, he must inspect the premises complained of Tho and report to the local authority next step is for the authority to make a closing order (statutory machiner, which was borrowed from Burns s Act of 1909) prohibiting the use of the house or houses in question until they are fit for habita tion—The owners must be notified, and may appeal to the Unistry of Health Reasonable removal expenses must be paid to tenants who have to full the confedenced bouse or houses. If the owner falls to make the house it for habitation within a specified period the local author ity must then consider the issue of a demolition order (these orders were also provided for in the 190; Act), and the owner has the right to be heard on it. The authority in ty make or postpone the order for six months, and the Ministry of Health may, on application by the owner rescand the order if good cause be shown If, however, the order becomes operative, the owner must take the house down within owner must take the horse down within three months, falling which the local authority may do so, sell the materials and pay the owner any balance after payment of expenses. Certain back to back 'houses erected after 1909, and also

proceed with programmed independent of gov help.

With the return of the Conservative Party, Mr. Neville Chamberlain again was the Act of 1903 which prohibited the crection of back to back houses, that is houses constructed without any space in the rear or any windows except in the front walls, so that there is no possibility of any through ventilation from front to but where there are no by-laws ICHT requiring open space in the front as well as in the lear, the crection is not prohibited of houses one room in depth with no bulyard and no rear wall windows, provided they do not back on to similar houses. Part III of the Act of 1925 working classes kyery local authority must con ider the needs of its area, and, as often is occasion arises, or within three months after notice given by the Ministry of Health, prepare and submit to the Ministry a scheme specifying (1) the approximate number and nature of the houses to be provided, (2) the average number of houses to the ac, (3) the quantity and locality of the land to be acquired for the purpose, and (4) the time within which the scheme or part of it is to be carried into effect. The Ministry may be carried into effect approve the scheme with or without modi two or more local authorities are affected, a joint scheme may be prepared. The Ministry of Realth may enforce the exer cis by the local authority of the statutory powers under Part III or authorise the committee that the committee that the committee the committee that th vision is also made for loans ou mortgage from the local authority to persons con-struct ng or altering houses, but such a ivances are subject to a limit as to the siz of the house or houses under con-struction. Power is also given to local co councils to promote the formation of public utility society w by making limited grants or loans for housing. The number of houses built with State assistance between 1919 and 1)_J was 721,000, with mit such assistance 351,000 and, of retter _74,000 were of not more than rateable value, or the inteable value in Metropolitan police dist bince the t World War and up to 1930, the total o r of payments from the Exchequer sut ally in respect of housing amounted to \$65,00,000 Up to 1936, more than \$60,000 new hours had been built in the United Kingdom so far as slum cherince was concerned direndy, by that year 400,000 shim dwellers had been provided with new and better accommo at ion under the troy's slum clearance presimme

The Act of 1930 (the so called 'Slum (h nance' Act) me to further provision with respect to the charance or improve ment of unhealthy weas, the repair or demolition of insar tray houses and H. of the working classes. It also amended all the previous Acts relating to H. subsidies Where local authorities doclars an area to rooms habitually used as sleeping places, be an improvement area, due provision must be made for persons distlaced, whether through demolition abstracent of over crowding etc., and similarly where areas are scheduled as tearance areas which in effect me us demolition Increased powers were given to local authorities to enforce notices to upair or demolish insanitars houses but an appeal lay to the co court. Where premises were demolished the co court had power to determine the lease. The re-enacting clauses of the Act of 1936, walker or properties the restance of t make no more than indirect reference to improvement schemes and it is to be pre-sumed that the appropriate remedias now only by charance schemes except where improvement schemes were initiated before the A t of 1936 came into operation A clearance scheme applies to an area in which the house iely reason of disrepair or sanitary detects un fit for habitution of by icason of their bad arrangement of the n flowness or bad arrangement of the streets dangerous or injurious to the health of the inhibi tants and in which the other buildings if any in the ire are for a like reason dangerous or injurious to he dth where the most satisfactory method of dealing with the conditions in the area is dealing with the Criticities in the area is the demolition of all the buildings in the area. But the local authority is bound first to provide suitable alternitive accommodation for the previous of the working classes who are displaced by the clearance The usual conditions as to In any case the scheme mut be within the local authority a resource A clear any case the scheme must be whenhe the local authority a resource. I clear ance order requires confirmation by the Minister. The owner or owners of the property involved must denote the with a weeks from the late a which the order requires the laddings to be vacated, and if the local athority under their demolitors that the owner does take demolition they too must do so within that period

A survey was undertaken by Muistry of Health in 136 into the incl dence of overcrowding and over 1 00 local authorities co operated in it llie result showed that of a teral of \$ 924 23 dwellings inspected, 341 4 (3 %) (recut) were overrowded, and that the survey also showed that the very very light of working class dwellers up 1 hard well working class dwellers in I list divide above the overcowdin to I id (see 13/12) except that the 14 n no lation at the disposal of large families of eight units' or more has on the whole in sufficient like average to the different classes of local authorities was I on I n bors 7.0 mm hors 1.2 nou con hors and inh 2 non co bors and urb rural dista 2 J The per co bors, 1 2 dist- 30 ru centage in London varied from 17 2 (Shored tch) to 1 7 (Woolwich) in cobors from 20 8 (Sunderland to 0 3 (Bournemonth) and in geographical co-from 12 of Durham) to 0.7 (Isle of Wight) 01 873,03 compell house inspected, 44,888 or 1 per cent were found to be overcrowde 1—as compared with a per-centage of 1 4 per cent for privately owned dwellings

enacted in the codifying Act of 1936), spon-ored by Mr King-ley Wood, introduced new measures for the abatement of overcrowding and the fixing of a national standard of accommodation (% heddle I)
There is a statutory definition of over
crowding, though the ministri of health
and the local authority may in creating
crounstances, relax the standard

The overcrowding standard may be re fixed by the minister only where a large projection of the housing a commodation in the area is constituted by dwelling houses consisting of tex rooms or rooms of exceptional floor are and then only aft a consultation with the Central Adv. 13 Committee (see infra) The Adverse Committee (see infra). The lead is a louthority may also relax the stand is 1 by it ence but only ewing to the exister cost exceptional encuritaires in hiding sees and increases of pape a gradier of visitors at haliday times. In any excut there is a time in it on relaxing to the budget of a complex are made responsible for overeasy lings and the sees at a track of the sees with the there are statutory defines available eg n alt mative accommodation was offered and refused. The steps to be taken by the local authority with regard to overcrowding are by way of inspection and report followed by pro o als for an accommodation and the dates when the sters have to be completed are fixed by the minister. If the result of the inspec-tion is such is to call for a redecelopment s heme the le il authority will beve to as a resolute n to that effect and within trunths preper to development plin t i submission so the mini ter

I submission to the min ter in result to the code from Act of 10 6 provid that it the led authority for any urb area are strived that their thick distributions and that their distributions are acontaining 30 or more wirking less houses that it less one than an exercise when the modern and according to the containing of the containing containing of the the industrial and social conditions of the dit a e such that the area should be used te a substantial extent for H the working classes and that it is exp dient in cen nect in with the provision of H accomme dation for the working class a that the area is hid he is developed as a whole it I the r duty to pass a resolution declaring the area are development area and pro ceel a cordingly

I a sist the minister and local authori in II there is statutory provision for the entitution of a Central H. Advisory C nille to adv toth the minister at 1 th virus II Minager of Commissions are of a terriament character and exercise such of to local authority a functions as to the the repair and maintenance of working class hou es and other buildings or land previded in connection with such houses, as I av be d legated to them by the local authority with the approval of the Provision is also made for the minister ene tragement and protection of H 1950x rations--voluntary bodies which are evidently 'public utility societies' under a new name these associations are The H Act, 1935 (repealed but re- entitled to the same amount of subsidy

1925.

A demolition order may now be made in respect of 'obstructive buildings, which, although in themselves not unfit for habi tation, would detract from the benefit of the measures taken for the improvement of H. conditions A building, to: this purpose, will be 'obstructive' if it is, by reason only of its contact or proximity to other buildings, dangerous or injurious to health. An offer may be made to the local authority by the owner for the sale of his interest and for assessment of compensation and the local authority is bound to accept the offer if made in the terms prescribed by statute if no offer be made the owner must demolish within specified period or the local authority will enter and demolish, and sell the materials in the usual way

An exchequer subsidy will be paid in respect of blocks of flats of not less than three storeys built on expensive sites Local authoratics will be called on to contribute sums equal to half the amounts of the I schedur payments. The idea im-pliest in the Act of 1935 is that private building enterprise should house the classes

with the help of subsidies.

Powers are conferred on local authori ties compulsorily to acquire properties for reconditioning at market valuation to arrange with property owners or public utility corporations to carry out te-

condition na

As regar is the compensation provisions of the Hact, 1935, provided that it dwellin houses or other buildings were no longer to be included in slum cle trance tre is and compulsorily acquired at site value reduction factor reducing compensation otherwise payable to owners or property jounted for tell purposes was abolished by the same Act The Act also provided that a distinction should be made in fayour of landlords who had endeavoured to maintain slum property in habit tole condition, and special compensation pa d to | them on the basis of the amounts expend ed on repairs in the y years preceding **co**ndemnation

Concurrently with the question of the supply of new houses there arese as a result of the Pirst World War, an econo mic problem concerning the rents of pre-war houses. Owing to the demand ex-ceeding the supply it was foresten that property owners would seek to profit unduly at the expense of their tenants To prevent threatened hardship the Rent Restrictions Act of 1915 was passed, and no increase in rent beyond that of 1914 of small houses was permitted until 1919, when, owing to the greatly increased cost of repairs, some advance in rent- became necessary. Perhaps profiteering was most itagrant in the case of furnished house, and these were included in a further Act in 1920 Increases of rates, however were passed on to the tenant. In 192, an

as the local authority itself would have that houses which became empty after been entitled to under the Act of 1923 ceased to be controlled. (See Rani IN VIRICTION ACTA)

While, then, the primary need for new houses claimed the greater prominence in the gov's attention to ii. in the years immediately following the First World War slum clearance received most attention in the field of legislation after 1930 10 to 126 sch mer resulted in the demoil tion of 11, 72 houses. This number was only a very small proportion of those need-mer a molition, indeed, it is a question wit that number was not equalled by the gross hold it fresh slum areas, through the contraction of the second of the s overcrowding and neglect of repairs, augustavated by demolition. The method of rell the poor in tenement dwellings, will the heast popular according to the lindings of he Chamberlan Committee on I nhealthy Areas, appeared to be the only a much ate alternative in congested 1 Pt 1 built in area, is they are called The difficulties of space and the workers tray Ping to work offer no ready solution. I ut in tural are as it is possible to develop H homes side by side with the planning ided. By the Act of 1919 every urb. author ty of 29,000 mhabs was competed to offer schemes for the approval who can pay common cents while the of the ministry of health. An important local authorities are to house the needlest, put of the schemes was the div. of the n w c as acto zones, for industrial c in croad, shopping, residential, and ju he use By 1926 nearly 500 schemes hid near cvolved some 800 000 persons w to removed from alutis into new houses diffuse the first five years' programme for sum h rance (1955) and during that ferral 165 134 house were demolished on e that year the plun was extended to thin cover 130,000 shim dwellings. Leeds, ment a city notorious for shims, then had and a most advanced schemes for H. The Dictential renting was introduced in 100 over 130,000 slum dwellings 11 The needs were to be housed in addince with the size of their families, the standard of their paying capacity, and to their 1 comes

It is a cynnal comment irv on the great procession of H. Acts—with their total inn burden of 1 000 000 accrued by mes-that the tar bomb has done men to eliminate six as than all the legislit ii When the air raids began in 1940 overcrowding in shelters and on tube won national standard of accommodation of 1935 a mockery Fortunately largese de evacuation from London prevented serous congestion in the Metropolis despite considerable destruction of H, as ommodation, five where bombing had been concentrated on a particular ar s, and workers had had to move away from their work the great net-work of Lindon's transport -ervices was instrumental in obviating any enduring diffihappy combination of circumstances did not obtain in many of the chief prov. cities, which had suffered heavy bombardment. There, evacuation had been on a much smaller scale, and the des-Act which continued till 1927 provided truction of living accommodation raised









an soute H. problem. Furthermore, over-crowding and social distress were only the beginning of the nation's difficulties in this matter. Some industrial this wore boon being threatened with a situation in which it was not physically possible to house workers within reasonable distance of their work. This problem was beyond the control of the local authorities, and its solution required compulsory billeting over a wide area, coupled with the general requisitioning of all available large or empty houses and halls. It called also for the immediate construction of new accommodation in the form of huts. hostels, and temporary houses and a still more vigorous evacuation policy. It became obvious that rehousing was not simply a post-war problem; in some areas it was a problem which, on a temporary basis at least, required prompt solution in order that neither public morale nor production might suffer

Housing after the Second World War. A greater H problem than that imposed on the country by the First World War was that which followed the Second Millions of houses were destroyed or more or less seriously damaged in the an raids; moreover the programme of house-build ing during the war years was a very limited one, as was that I the immediately antecedent period. After hostilities had ended Britain entered upon an era of the most acute economic crisis when the shortage of both labour and, still more, of materials made it impossible for some materials made it impossible for some time to carry out even a small part of the planned H. programmo. Far more new permanent houses were planned and actually statted in 1946 than could po-sibly have been timished within a reason solid time. Up to the end of that year some 170,000 families were found accommodation by the reput or refashioning of existing dwollings, as against 150,000 families rehoused by the construction of new dwellings. The most fruitful form of new construction was the temporary housing scheme which yielded 92,000 new homes (pre-fabricated houses). The three types of permanent house con struction-provision by local authorities. provision by private builders and other private agencies, and the rebuilding of war-destroyed dwelling—together produced no more than \$5,000 dwellings. Of

able in all dists, tremendous pressure was applied to get house building started in all districts, in order to prevent any drift of labour out of the building industry. But later, and before the close of 1946, it bot inter, and below the close of 1329, became easier to enlarge the number of workers than to enlarge the supply of materials needed to keep them fully occupied, and in Dec. 1946 the industry's total labour face 1,20,000 was practically equal to what it had been in 1939 (June) for 1947 H, work of all kinds was allotted three-fifths of all building labour. Work on existing houses (maintenance, ropairs, conversions, (tc.) was to be allowed to absorb 280,000 operatives, while 300,000 were to build new permanent houses. With this labour force, and with a stock of 204,000 unfinished dwellings left over from 1946 (Including 974) per cent of the muni-cipal houses started in 1946), the aim for 1947 was: the starting of 240,000 new per-manent dwellings, of which 201,000 would be carried forward for completion in 1945, and the completion of 240,000, including the 204,000 brought forward from 1946. The houses to be computed included The houses to be completed included 190,000 municipal dwellings, 15,000 war destroyed houses and 35,000 to be built by private enterprise and other agencies some 60,000 bungalows wanted to wind up the temporary H scheme were also included in the 1917 programme. The first white paper on post-war H. (dated March 1945) set out three objectives. The first was to give every family a separate home and, to do this, it was estimated that 7:0,000 dwellings would be needed. The second was to continue the slum-clearance schemes suspended during the war; it is commated that another 500,000 houses would be needed to replace unit houses and to relieve overcrowding already con-demned before 1939 The third or longdemned before 1939 The third or long-term objective was defined as 'a continnous programme of improvement in housing conditions, bringing old houses up to date, converting others into flats, and building new houses where necessary to meet changes in the location of industry. No figure was assumed for this but the minister of health, much later, said that they had to 'envisage a programme of something like 4,000,000 to 0,000,000 houses, and even then we should have some arears still left. Though the target of 7:0.000 houses above mentioned was duced no more than 55,000 dwellings. Of 750,000 nones above mentioned was these, 21,000 were numerically evided in the number proved hopelessly each of nonely all for sale) privately owned. During the war scarcity of end of the war and mil 1949, the number building labour was generally expected to be the main obstacle to a rapid (x-pansion of house construction As demobilised building workers become available to objective of 750,000 additional provided in the same of the provided in the same of the same o

SOME EXAMPLES OF ENGLISH HOUSING

1. Arrey type houses of non-traditional construction in the New Forest, him the matthem, parlour scullery, three bedrooms, bathroom and W C., wash house, fuel store and second W C in out

building 1947.

2. Traditional brick houses in Barrington Road, Worthing (architect, C. Cowles Voysey, F. R. I.B.A. iving-toom, kitchen, three bedrooms, bathroom, set arate W.C., and outbuilding containing fue and tool stores. 1947. C.O.I. Crown copinght

3. Aluminium prefabricated houses at Cheltenham, two bedrooms. Hambiev.

4. Flats at Hildrop Estate, Islington. 207 flats in 4 blocks—2 one-room, 33 two-room; 81 four-room; 10 five room, completed in 1948. London Counts Council.

tional houses, which the Coalition Gov. had estimated at the end of the war to be necessary to provide a separate home for each family in need of one. In mid-1949, 190,48d permanent houses were under construction in Great Britain, and an additional 63,847 more were approved but not begun. The mouthly figure of permanent houses put into occupation over the preceding year exceeded 15,000, and the yearly total increased steadily in the period 1945-48. Moreover, there was a gov. programme for the building of 15,000 aluminium bungalows, allocated to mining areas to relieve a particular need. For rural dists. Sir Edwin Airoy designed a two-storey house of concrete blocks and posts, and 2 :000 of these were allocated. The need for moreased production of coal and tool led the rest of the rest to the second se and food led the gov. to give priority to the housing needs of workers in mines and on the land; from April 1947 to June 1949 30,328 new permanent or temporary houses built by local authorities were let to miners, and from April 1945 to June 1949 18,418 to agric, workers. The different form the first to the different party of the state of the stat culty of softwood timber imports was a limiting factor; supplies from Europe and Russia contracted sharply in comparison with pre-war years, and N. Amer, imports were a charge on dollar resources. By the end of June 1919, 912,700 families had been housed: 681,043 in permanent or temporary new houses: 139,887 by the repair of houses rendered uninhabitable by bombing; 115,770 by the adapta-tion and conversion of existing dwellings. When the use of service camps and temporary huts, and requisitioning is taken into account, 999,710 families were housed Some three and a quarter million people had, in sum, been provided with homes. Repairs were also effected to 775,000 damaged but habitable houses.

More and better houses have been built in Great Britain than after the First World War, though perhaps fewer than in 1938 when there were fewer men to build them. Houses today however are one-fifth larger than before 1939 and there are more fittings, points and gadgets This may partly account for their taking longer to build today. It has been calculated that if the housing situation re quires a programmie of four to two million houses at the pre-1939 rate of building it would take from thirteen to sixteen years to complete; and at the present (1919) rate it might take seventeen to twenty As regards construction, some experta think there is not sufficient experi-mentation with non-traditional methods; others, however, think that brick is always to be preferred. Experience has shown that the 'pre-fab' house takes as long to build, besides costing as much, if not more. A committee of inquiry into cost recently reported that a typical local authority house of 1947 cost 31 times as much as it's pre war counterpart and re-quired double the labour and a third more material. In London the average cost was authorities; the preservation of houses £343 in 1939, including the cost of land, which have special historic or architecreads and sewers; in 1949 the comparable tural interest; an increase of Exchaquer average figure was £1815—threefold more, subsidies and contributions from the Rents, however, are not three times more.

The rents ordinarily payable by the persons of the working classes are mostly controlled rents under the Rent Restriction Acts, pegged at 1914 rents plus 40 per cent in the case of old-controlled houses, or at 1939 rents for others. To enable local authorities to keep the rents of new houses down to a reasonable level, the subsidy was raised to £16 10s, a year for 60 years from the State, and to £5 10s. from the local rates or £22 per house in all. This subsidy, it was estimated, would enable the rent to be fixed at 10s. a week. But though building costs had risen since 1946 the subsidy remained the same, and to meet the higher interest charges on the higher capital cost, local authorities had to increase the rent, or make larger contributions from the rates, or both. Private builders were (1949) building for owner-occupiers one-fifth of the total number of houses allocated ; in addition, the greater proportion of local authority houses were being creeted by private builders, working under contract for the local authority. In Jone 1919 the meximum price of privately-built houses was made variable according to the type and size of house, and was to be assessed by the local authority according to the cost of similar houses built by them, instead of boing tied to the previous limit of £1,300 (21,100 m London). Also the maximum superfired area of such houses was raised from 1,000 sq. ft. to 1,500 sq. ft. Under the Housing Act of 1949, which

applies to England and Wales, improvements carried out by the local authority must onsure satisfactory accommodation for at least thirty years, and the work must conform to standards of amenity and titness specified by the udmster. Exchequer grants towards the cost will equal three-quarters of the estimated ann. less to the local authority, the remaining quarter to be met from local rates. Local authorities will pay grants for the approved schemes of private owners, to the maximum of one-half; an Exchequer contribution will be given to the local controllion will be given to the local authority. From most sections of the thorsing Acts the term "working classes" is deleted, thus enabling local authorities to create balanced communities by the provision of mixed estates of houses of varying type and size. Local authorities are empowered to provide restaurant and laundry services and to sell furniture. Allowances for persons displaced from sites acquired for housing are permitted. Control of selling price and ronts of new premises provided by building or conver-sion is extended from Dec. 1949 to Dec. 1953. The £1,500 limit on house-value for which councils may loan money for purchase under the 1936 Housing Act or the Small Dwellings (Acquisition) Acts is raised to £5,000. Other provisions include special subsidies for residential nectude special sucedars for residential hostels provided by housing associations, new tn. development corporations, or local authorities; the preservation of houses which have special historic or architec-tural interest; an increase of Exchequer subsidies and contributions from the raised by measures (e.g. building in stone) taken to preserve the character of the surroundings, such measures to be approved by the minister; and the quashing of demolition orders, operative before Jan. 1, 1946, where houses have been made fit for babitation, as has happened in a small number of cases. The extra subsidies payable for houses and flats built on expensive sites will be adjusted for schemes approved by the minister after Feb. 1949, in order to take into account

Feb. 1949, In order to take into account variations in density of development. See W. Casson and A. Ridgway, Housing and Town Planning Act of 1999, 1912; H. E. Smith, Municipal and Local Government Law, 1920; B. S. Townroe, A Handbook of Housing, 1924; F. Fremantle, Housing and the Natura, 1926; T. Sophian, The Housing Act, 1935; The League of Nations, Urban and Rural Housing, 1930; Ministry of Health, Annual Report, 1941–45, 1915; M. Bowley, Housing and the State, 1919–1914, 1915; Dent's Design for Britain' booklets, 1942–44; Boutnville Village Trust, Land-

1945: Dent's 'Design for Britain' booklets, 1942-44; Bournville Village Trust, Landscape and Housing Development 1949; and S. Gale, Modern Housing Estates, 1949.

Housman, Alfred Edward (1859-1936), Eng. Lotfinist and poet. Educated in Worcestershire at Bromsgrove School; St. John's College, Oxford. Higher-divelerk in H. M. Pater' Office, 1882-92. Prof. of Lat., Univ. College, London, 1892-1911. Fellow of Trinty College, and prof. of Lat., Cambridge, 1911. Pub. poetry is A Shropshire Lad (1896), Last Poems (1922). Ed. Manilius—Ik. I, 1903; Book II, 1912; Book III, 1916; Book IV, 1920; Book V, 1930; Juvenal (1905), Lucan (1926), More Poems was pub. posthumously in 1936. There have been muny reprints of A Shropshire Lad which is a string of sixty-three ballad-like which is a string of sixty-three ballad-like poems (they have been set to music)love, country-life, drinking, and fighting. H.'s poetic craftsman-hip is remarkably perfect in one who could give comparatively little time to verse. His total out-put is small, but in his work there is hardly a weak line. He has the secret of or the decorative ornamental. In regard to the content of his poetry, he has been compared to Hardy, but the likeness as uperficial, for his philosophic outlook is that of the unregenerate finalist, desparational descriptions. ing but resolute in his acceptance of man's hopeless struggle. Sec L. Housman, Some poems, letters and a personal memor, 1937; and G. Richards, Housman, 1939.

Housman, Laurence, Eng. author and illustrator, b. 1865; brother of Alfred Edward H. Studied art at S. Keusington.

Moon (1904), John of Jingalo (1912), The Royal Runaway (sequel to procedling, 1911), Turn Again Tules (1930). His novels are: An Englishroman's Love-Letters (1900), A Modern Antawa (1901), Subrina Warhama (1904), Trimblerigg (1921), Ungle Tom Pudd (1927), H.R.H. the Duke of Flamborough (1928). Playinclude: Prinella (with H. Granville-Barker, 1911), The Death of Orpheus (1921) Possession (1921), Little Plays of St. Francis (1922). He has also written Arthur Royal Houghton (1896), Dethronements (inaginary dialogues, 1922), Echo de Paris (about Oscar Wilde, 1923), Palace Plays (1931), The Queen's Progress (1932), The Unexpected Years (1931), Palace Scenes (1937), Collected Poems (1938), Garvous Majesty (1941), Samuel, The Kingmuker (1944). Moon (1904), John of Jingalo (1912), The Kungnusker (1944).

Houssain, or Hussein, son of Ali and Fatuma, see HASSAN.

Houssas, see HAUSAS.
Houssays (or Housset), Arsène (181596), Fr. littérateur and poet, fanous bi
13 86 for his novels, La Couronne de Biuet(1880), and La Pécheresse (1863). He waderetor of the Théâtre l'iançais (c. 1819 of the Musees. His works include critic isms of art and literature, poetry (Poésies Completes, 1849), and many novels. His Confessions appeared in 1885-91. See J.

Lemaitre, A. Houssaye, 1897.
Houssaye, Henri (1848-1911), Fr. hotorian, son of Arsène. His carly works, such as Histoire d'Apelle (1867), Histoire d'Atchiade . . . (1873), deult with classi-cal antiquities. His best writings ard'Atchinde (1873), deult with classical antiquities. His best writings are those treating of the Napoleonic period. 1814 (1888), followed by '1815 in three parts (1893-1905), the second dealing with Waterloo, the third with Lawonde restauration, bu terruur blanche Napoleon, homme de guerre, appeared in 1901. H. became a member of the Fr. Academy, 1894. He wrote under the pseudonym 'Georges Werner,' See L. Sonolet, Henri Houssaut. 1900. Sonolet, Henri Houssaye, 190 ..

Houston, cap. of Utres co., Texas, U.S.A., on Buffalo Bayou, 18 m. N.W. of failveston on the gult of Moxico. The Bayou is navigable to H. and over fifty steamship lines use the port. II, is also a very important radway centre. Manufs. nclude engines, machiner, rallway-cars. Sugar, cotton, and old are produced, and lumber trade flourshes. Settled in 1836, it was named after Sau H., and has fine public buildings. Pop. 384,500.

Houston, Samuel (Sam) (1793-1863), Amer. soldier and politician, first president Edward H. Studied art at S. Keusington, and illustrated: George Mercdith's Jump- to-Glory Jane (1892), Christina Rossetti's Hie culisted, 1813, serving in the army till Goblin Market and Jonas Lie's H'eird Tales from Northern Seas (1893), his slater Clemence's Were-Wolf (1896), Shelley's Sensitive Plant (1898), and his own Farm in Fairyland (1894) and New Child's Guide (1911). His poetry, much influenced by D. G. Rossetti, includes: Spikenard (1898), Mendicant Rhymes (1906), The Heart of Peace, etc. (1918), The Love Concealed (1928). His tales include: All Fellows (1896), The Blus of Texas (1836). In carly life he lived

he represented it in the U.S.A. Senate, 1846-59. Elected governor of Texas in 1859, he was dismissed (1861) for opposing his state's secession. See lives by A. Williams, 1893; W. Crane, 1881; H. Bruce, 1891 and M. James, The Raven; the Lafe of Sam Houston, 1929.

Houting, see under Coregonus Pollan.

HOUSING, see under COREGON'S FOLLAY.
House, or West Brighton, municipal bor,
and the most fashionable quarter of
Brighton, on the coast of Sussex, England.
It has many fine shops and clean wellspaced streets. Along the parade are
well-kopt gardens. The Sussex Co.
Cricket Ground a hers. Pag. 75 300 ('ricket Ground 19 here. Pop. 75,300.

Hovey, Richard (1864-1900), Amer. poet, b. at Normal, III.; graduated at Dartmouth, and followed various professions in succession; came to Europe and trans. poems of Maeterlinek. Wrote much original verse, including Launcelot and Guinevere, a scries of dramas. Talierin, and thinevere, a scries of dramas, Tattern, 1 Masque, and Seavard, pub. together in a posthumous collection. The Holy Graal (1907). Collaborated with Bliss Carman (q.r.) in Songs from Vagahondia (1893 and 1896), and pub. miscellaneous poems, Along the Trul (1898).

Howard, illustrious Eng. family, dukes of Norfolk since the fifteenth century, at

of Norfolk since the ifficenth century, at the head of the nobility, perhaps descended from the Hereward of Edgar's reign (957-75). The first noted member of the house was Sir William H., or Haward, chief justice of the Common Pleas under Edward I. and Edward II. (1297-1308). His grandson, Sir John, was admiral and captain of Edward III's navy in the N., and sheriff of Norfolk. The admiral's great-grandson, Sir John, was a prominent Yorkist, created first duke of Norfolk and earl-marshal of England (1433). He fell at Bosworth Field (183). He fell at Bosworth Field (183) fighting for Richard III. His son, Thomas, earl of Surrey, was imprisoned for three years, but then regained his rights and titles, commanding the Eng. at Flodden (1513). His son, Thomas, third duke of Norfolk, was attainted by Henry VIII., and only escaped a death similar to that of his son, received a state of the state o came earl of Arundel and Surrey (1601), and earl marshal (1621). Bernard Edward H. (duke of Norfolk, 1815), was great-grandfather of the sixteenth duke, Bernard Marmaduke bit-Alan H. (b. 1908).

The numerous branches of the family of H. are represented by the dukedoms or earldoms of Carlisle, Suifolk, Berkshire,

age of England, 1779; M. Tierney, History of Arandel, 1834; H. Howard of Corby, Memorials of the Howard Family, 1834; H. K. Causton, The Howard Papers, 1863; C. T. Gatty, The Noble Family of Howard, 1879; G. Brenan and E. Statham, The House of Howard, 1907.

Howard, Catherine (c. 1520-12), grand-daughter of the second duke of Norfolk (d. 1524); brought up by his widow, she became fifth wife of Henry VIII. soon after the divorce of Anne of Cloves (1540). This marriage pleased the Rom. Catholle party, but Catherine was soon accused of im-morality with Culpeper and Dereham. She protested that she had been faithful She protested that she had been faithful to the king sloce her marriage, but was beheaded with all the partners of her intrigues, including Lady Rochfort (1542), See J. Froude, History of England, iv., 1858; Agnes Strickland, Lives of the Queens of England, lii., 1877.
Howard, Charles, second Lord Howard of Effingham (1536-1624), Eug. admiral, grandson of the second duke of Norfolk. He held yarpuis civil and military nouts

He held various civil and military posts under Elizabeth, becoming lord high admiral (1980). As commander-in-chief against the Sp. of the Armada (1588), ho had Drake as his second-in-command. H. was associated with Essox (1596) in the successful expedition against Cadiz. and made earl of Nottingham in reward for his services. When fresh Sp. inva-sions were feared, between 1597 and 1599, Nottingham was appointed lord-lieu-tenant of England. He continued to hold Nottingnam was appointed ford-figu-tenant of kugland. He continued to hold high office under James I. See J. Camp-bell, Lares of British Admirals and Emi-nent Seamen, 1., 1779. Howard, Sir Ebenezer, Eng. urbanist (1850-1924); b. at London. Hegan work as a clerk in various stockbrokers' offices in the city. Emperated to Nelseeke

in the city. Emigrated to Nebraska where he farmed for a short time, but moved to Chicago and took up the calling of shorthand writer. Returned to Eng-land in 1876 where we worked at short-hand writing in the Law Courts and else-where. The Garden City founded by A. T. Stewart on Long Island and now a suburb of New York probably first aroused by Interest in the advances. his interest in th. planning. H. married in 1879, and at the Zetetical Society, a debating club, first met G. B. Shaw and Sidney Wobb.

Possibly suggested by Henry George's Progress and Poverty, H.'s scheme for a garden city based on land values created garden city based on land values created by the community was embodled in his book Tomorron: A Peaceful Path to Real Reform (1891, rovised 1992) which ex-pounded his theory of rent-rates. H. did not advocate the nationalisation of land but its ownership by nunicipal authorities who would derive the whole of their revenue from rents or leases, thus ensuring that development value of land or earldons of Carlisle, Suffolk, Berkshire, ensuring that development value of land Northamnton, Arundel, Wicklow, Norwich, Effingham, and the baronies of Bindon, Howard de Walden, Howard of Castle Rising, Howard of Effingham, and Howard of Glossop. See Sir W. Dugdale, Baronage of England, 1675-76; C. knighted 1921, Became O.B.E. 1921, Baronage of England, 1675-76; C. knighted 1927. Died at Welwyn Garden City, where he is commemorated by a Howard Family, 1769; A. Collins, Peerlife by D. Macfadyen, 1933; and C. B. Purdom, The Building of Satellite Towns, 1925, 1949.

Howard, Frederick and George William Frederick, see Carlisk, Earls of. Howard, Henry and Thomas, see Sur-

REY, EARL OF.

Howard, John (1726-90), Eng. philanthropist, capecially famous for his labours to secure prison reforms. While attempting to go to the relief of the survivors of the Lisbon carthquake (1755), he was captured by the Fr., but soon managed to effect an exchange for himself and his fellow-prisoners. II, became high shoriff of Bedfordshire (1773), and in this capacity had his interest in the condition of acity had his interest in the condition of prisoners roused. He travelled widely, visiting gools throughout England and Europe. His State of Prisons in England Europe. His State of Prisons in England and Walts, with an Account of some Foreign Prisons . . . (1777), resulted in the adoption of the hard-labour system. An Appendix was added in 1780. His Account of the Principal Lazarettus in Europe appeared in 1789. He died of camp-fever at Dophinovka, now Stepanovka pear Kleron in Pussia. See lives camp-fever at Dophinovka, now Stepanovka, near Kherson in Russia. See lives by J. Aikin, 1792; J. Baldwin Brown, 1818; T. Taylor, 1836; W. Dixon, 1849; J. Field, 1850; J. Stoughton, (new ed.) 1881; E. H. C. (nl. >>, 1921; also Ancedotes of J. Houard by a tentleman, 1790, and J. Field, Correspondence of J. Houard, 1855; A. R. Gardner, The Place of John Howard in Penal Reform, 1920. There now exists a H. League for Penal Reform with offices in London to promote the right treatment of delinquents and the right treatment of delinquents and the prevention of crime.

Howard, Leslie, stage name of Leslie Stainer (1893 1943), Eng. actor, b. in London: educated at Dulwich College. On leaving school he worked as a clerk in a bank until the outbreak of war in 1911 when he served in the army until his di-charge in 1917. He then decided to fulfil an early ambition to become an actor. He joined a touring company and actor. He joined a touring company and his first appearance was as Jerry in I'eg o' My Heart in 1917. He appeared on the London stage the following year, playing in Mr. Pun passes by, Our Mr Mepplewhite, and other plays. He spent the next few years in New York, and returned to London in 1925, appearing at the Queen's Theatre in The Way Fou Londat II. During a second visit to New York in 1927 he produced Her Cariboard Lover, in which he made one of his greatest stage. in which he made one of his greatest stage successes. He brought the play to the Lyric Theatre, London, the following year. Other notable performances were in Berkeley Square (1929) and This Side Idolatry (1933), in which he played the part of Wm. Shakespeare. He was himself the author of a play produced in New York as Murray Hill in 1927 and in London as Tell me the Truth in 1928. From 1930 onwards he played a number From 1930 onwards he played a number of leading parts in films, including Of Human Bondage, The Petrified Forest, The Scarlet Pimpernel, and its modern counterpart Pimpernel Smith, and Pygmalian. During the Second World War hadden and proposed the second world war he did valuable work as a 'voice of Britain'

in his broadcasts to overseas listeners. In 1943 he went to Madrid to lecture on behalf of the Brit. Council. He was killed on the return journey when the aeroplane

on the return journey when the aeropiane in which he was travelling was brought down by enemy aircraft (June 1, 1943).

Howden, par. and mrkt. 'n. of E. Riding Yorkshire, England, on the Ouse, 3 m. N.N.E. of Goole. It has a thirteenth-century church and a famous horse fair. Coal is mined. Pop. 11,900.

'Howe,' hattleship of the King George V. (4.v.) class, laid down in 1937 on the Clyde and commissioned in 1942. Her dus-

and commissioned in 1942. Her displacement, complement, size and arma-ment are unillar to those of the Anson

(q.r).

Howe, Elias (1819-67), Amer. inventor, at Spencer, Massachusetta. While employed as a machinist he conceived the employed as a machinist he conceived the dita of inventing a sewing-machine, entered into partnership with Fisher (1844), and completed his lock-attich machine, 1845. H. was granted a patent (1846), but success was long in coming to him. The imitations and improvements of Isaac Merritt Singer (1811-75) and of others infringed his patent, but H.'s rights were findly estab, after a law suit (1854) See J. Parton, 'History of the Sewing-Machine,' in the Atlantic Monthly (May 1867); P. G. Hubert, Inventors, 1893, Howe, John (1630-1705), Eng. dissenting minister, known as the 'Platonic Puritan,' He was domestic chapitain to (Youwell the Protector and his son

Scuting minister, known as the 'Platonic Puritan.' He was domestic chaplain to ('romwell the Protector and his son Richard (1658-59). The Act of Uniformity (1662) ejected him from Great Torrington. H. returned to London as minister of a Puritan congregation (1075). He travelled abroad with Lord Wharton (1685), but returned on James's 'Declaration for Juneary Consenses.' (1877) (1885), but returned on James's Declaration for Liberty of Conscience (1687). His works include: The Blessedness of the Rightcous (1688), The Redeemer's Tears... (1684), and his fine production The Living Temple (1074-1702). See lives by E. Calamy, 1882; S. Dunn, 1836; and R. F. Horton, 1896.

Howe. Joseph (1901-73). Cauadian

and R. F. Horton, 1896.
Howe, Joseph (1901-73), Canadian statesman, b. at Halifax, N.S. Became (1928) proprietor and ed. of the Acou Scattan, to which he contributed many sketches. He was cletted to the local Parliament, and was instrumental in minima for Nova Scotia a responsible gov. Became speaker of assembly (1840), secretary of state for the dominion (1870), and governor of Nova Scotia (1873). and governor of Nova Scotia (1873)

Howe, Julia (nee Ward) (1819-1910). Amer poctess and philanthropist, married in 1843 to Dr. Howe With him she ed the Boston Commonwealth (1851-53). She lectured on social subjects, and was active in championing the cause of women, and in championing the ause of women, and under prison and other reforms. She helped to organise the Amer. Women suffrage Association (1809), and in 1872 was president of the New England Women's Club. Her works include: Passion Flowers (1834), 'Battle-Hymn of the Republic' (1862), and other pooms, all collected in From Sunset Ridge Froms Old and New (1898), two dramas (1855, 1858), the prose works Sex and Education (1874), Modern Society (1881),

Reminiscences, 1819-99 (1900). Sketches of Representative Women of New England (1905). See They Walk with God, by her daughter, Laura E. Richards, 1919.
Howe, Richard, first Earl (1726-99), Eng. a.linital, a younger son of Emanuel Scrope Howe, second viscount Howe in the Irish pecrago; his mother was the daughter of Baron Kleimansegge, Master of the Horse to George I. when Elector of of the Horse to George I, when Elector of Hanover. He served with distinction in



RICHARD, FIRST EARL HOWE

the Seven Years' wat against the Fr. (1756-63), accompanying Boseawen to N. America, helping to capture the 'Alerdo' and the 'Lyst,' and being present at Quiberon Bay (1759) H. became tressurer of the navy (1765-70) In 1476 he returned to N. America as commander in chief, and forced the passage of the Pelaware, successfully resisting the Figurder D Estaing. He next won fame by his relief of Gib raltar (17-2), and returning to England became first lord of the admiralty (17%)-58). If most famous achievement was the victory of the glorious first of June (1791) over the Fr. off Ushant. See life (1791) 6.00 the Fr. on Ushant. See He by SH J. Barrow, 1838. Steady, I. Camp-bell, Lives of the British idmirals and Emment Science, 1, 179; J. Rup, Naval Biographic, 1, 1826; and T. Anderson, The Communic of the Hone Brothers during the American Explaints (1997).

(1828), and a Reader for the Blind, See J. G. Whittier's poem, The Hero; J. W. Howe (his wife) Memoir, 1876; life by F. B. Sanborn, 1891; and L. E. Richards (ed.) Letters and journals, 1910, Howe, Sir William, fifth Viscount (1729– 1414) little solding of the Aron Decel-

1511). Brit. soldier of the Amer. Revolution, succeeded his brother Richard as Viscount H. (1799), this Irish peerage be-coming extinct on his death. Going to America (1758) he helped in the capture America (1758) he helped in the capture of Louisburg, and accompanied Wolfe to Quebec. II, returned to Europe (1760), and after holding various commands he ame major-general (1772). He was again sent to America, commanding the But. at Bunker's Hill (1775). Priven from Boston by Washington (1776), he won the battle of Long Island, and entered New York. He later defeated Washington at the Brands wine (1777), and occur ton at the Brandy wine (1777), and occufon at the production of the control of Philadelphia, resigning soon afterwards. See Narrative of Sir W. Hoirs... 1750. and T. Anderson, The Comman Lofthe Howe Brothers during the American Parallelism 1038. Revolution, 1936.

Howelske, Johann, see Hevritte, Howell, James (c. 1594-1666), Bret author, graduated from Oxford (1613). He is velled abroad (1616-22), and then engaged for a time in diplomatic work. He was imprisoned from 1643-51, but released on the Restoration (1660), and appointed historiographic royal of England. His works include: \(\Delta \cong \text{Approximately and Polynets of the Focal Forest (1640, 1 poem), Instructions for Foreign Francisci (1650); Francis (612), Le non Petraglotten (1660); and the Fund the Hole Inne, Funding the Hole Inne, Funding Letters Dome the and Forces (1615-1655, repuint by J. Jacobs of 10th ed. 1890-1891), Reppher's ed., 1907, (Temple Classes series). See W. Vann, Voles on the witness of James Hanell, 1921, and E. Bensly, James Hanell, 1922, 27, Howells, William Dean (1837-1920), Amer povelist critic, and part, b. at st. Martin's 1 erry, Belmout, Ohio; son of Wm. Cooper H. He oarly became a journilist in Ohio, was United States consult at Venice, 1861-65, and on his return

sul at Venice, 1861-65, and on his return was connected with sev. New York news-papers, and with the Boston tilantic Monthly (1866-81), becoming editor about 1871. II. was the recognised leader of the realistic school, and his works deseribing familiar incidents and details of ordinary everyday life in America have been both popular and influential. He tried some of the sublicty of Henry James, with a planner narrative style, He Biograpace, 1., 1-26; and T Anderson,
The Command of the Howe Brithers during
the American Revolution, 1936
Howe, Samuel Gridley (1301-76), noted
Amer. phd indropist, known as the
Latagette of the (Br. Revolution) for his
services in the War of Independence from
1821-30. Returning to Boston he worked
to establith there a school for the billid,
becoming director of the Perkins Institute (1832). He was especially successful over the case of Laura Hridginan
(1829-39) (q.e.). In 1848 Dr. Howe comcerned himself with the education of
idiots and the feebleminged. He wrote
Historical Skeiches of the Greek Revolution

Heading the Ampan Lefe of Lineain (1860),
and Points by Tro Friends (1860),
ther Wedding Journey (1872),
the Ladyolfhe Arostookok (1871), A modern
Instance (1822). A Woman's Recson
(1881). The Rive of Silva Laphem (1885).
The Minner rearrative style. He
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and Points by Tro Friends and Points of the Works are: Venetical (1860),
ther Wedding Journey (1872),
A Woman's Recson
(1881). The Rive of Silva Laphem (1885).
The Minner marrative style. He
plant of Company Lefe of Lineain (1860),
and Points by Tro Friends (1860),
there were the Ladyolf the Arostookok (1871), A modern
Instance (1822), A Woman's Recson
(1881). The Rive of Silva Laphem (1887),
The Ladyolf the Arostookok (1871), A modern
Instance (1882), The Rive of Silva Laphem (1883),
The Minner marrative style. He
plant of Company Lefe of Lineain (1860),
and Points by Tro Friends (1860),
the American Lefe of Lineain (1860),
and Points by Tro Friends (1860),
the Ladyolf the Arostookok (1872), A Woman's Recson
(1883), The Rive of Silva Laphem (1883),
The Ladyolf the Arostookok (1872), A Woman's Recson
(1883), The Rive of Silva Laphem (1883),
The Ladyolf the Arostookok (1872), A Woman's Recson
(1883), The Ladyolf the Arostookok (1872), A Woman's Recson
(1883), The Ladyolf the Arostookok (1872), A Woman's Recson
(1883), The Ladyolf the Arostookok (1872), A Woman's Recson
(1883), The Ladyolf the Arostookok (1872), Films (1905), Between the Dark and the Daylight, Fennel and Rue (1908), Imaginary Interviews (1910), My Mark Twain (1910), New Leaf Mills and Familiar Spanish Travels (1913), The Seen and Unseen in Stratford-on-Aron (1914). See J. M. Robertson, Essays towards a Critical Method, 1889; H. C. Vedder, American Writers, 1894; O. W. Firking, William Dean Howells, 1924. He has been classed as one of the live Amer novelists of Inter-Dean Holletta, 1921. He has oven classes as 'one of the two Amer, novelists of international distinction' See Life in Letters, by his daughter, Mildred Howells, 1923. Howell's State Trials. The true originator of this series of 'State Trials' was

Cobbet (1762 1845), in 1809, but they received their present title as T. B. Howell (1768-1815) ed. vols. 1.-xx1. (1809-1815) ed. vols. 1.-xx1.

Howell (1768-181a) ed. vois. 1.-xxi. (1000-15), and his son T. J. Howell (d. 1858), vois. xxii.-xxiii.

Howitt, William (1792-1879), Eng. author. He began to write at an early ago, and when he was thirteen, one of his poems appeared in the Monthly Magazine. In 1821 he married Mary Botham, and husband and wife wrote many books in collaboration. He early studied natural science and modern literature and languscience and modern interature and languages, becoming a very miscellaneous and prolife writer and very popular. The Rook of the Seasons, or the Calendar of Noture (1831), a Popular History of Prestraft (1834), Partilla, or "indicence of the Most Ancient Times (1835), and the Rural Life of Fagland (1838), give some idea of his scope illis most successful work was a scope. His most successful work was a Popular History of England (1856-62). The literary work of H. and his wife covered poetry, fetton, history, transla-tions, and social and economic subjects: useful and pleasing in its day, little of it has survived. Mary Howitt's autobiography was ed by her daughter in 1989.

Howitzer, name applied to a particular pleas of oxylumpa, which is at the control of the control

piece of ordinance which is of the greatest value in sieges. The word is derived from a Bohemian word meaning a catapult This particular form of gun has been in fairly general use since the systemth century. It is a small, light gan which fires a shell at a small velocity but at a atech angle of descent. It has therefore proved invaluable as a means of hombarding trenches and sourching low-lying and hidden defences. The First World War occasioned a great development in Hs., and the employment of large pieces by the Gers. during the siege of Liege marked a definite advance in construction. The fortifications constructed before the war were no match for the huge weight of projectile used on them, so that when trench-warfare set in, and it was necessary to construct shelters for personnel, gun emplacements and protection of any kind within range, all former specifications of such works required considerable modification to meet the new weapon. though the ders, had this start of the Allies, the latter took prompt measures to nullify the disadvantage, and in the course of time heavier and heavier Hs. Ames, the latter took prompt measures to nullify the disadvantage, and in the course of time heavier and heavior Hs.

Hoyle, Edmund (1672-1769), writer on what and other games. Of his early life appeared in the zone of operations, until nothing is definitely known, but he is supposed to have read for the law. He the 15-in. ('Granny'), appeared in 1915. lived in London, giving instruction in and Hs. were generally employed against forti-

and fications, dumps, guns and for cutting wire 908), entanglements. If their work had been durk done too well they disturbed the surface of the earth so much that it was often difficult for the slide which employed them to traverse the ground to carry out the intentions of the commander. Transport and the removal of casualties were hampered a good deal in this manner The conditions of static warfare favoured the employment of huge IIs., but their transport and ammunition supply precluded their employment in war of movement

Howling Monkeys, name given to the species of Myceles, a genus of mammals belonging to the order Primates and the family Cebide. They are hideous in appearance, having a prominent face and decrease. deep jaw, while the tail is long and pre-hensile. The howling is produced by the unusually developed sacular directicula of the laryns. These monkeys are common to Central and S. America.

Howrah, tn. of W. Bengal, India, on the R. Hugli, opposite Calcutta, of which it forms a suburb. It is a rallway termi

it forms a supurb. It is a railway terminus, and has dockyards and manufs, of pite and cotton. Pop. 379,200.

Howth, th., situated on a rocky penin sult (363 ft. high) of the same name, N side of Dublin Bay, Eire. It is on important is-ling depot and a summer resert. There are runs of an abbey of the thirteenth century. Pop. 3000.

resort. There are runs of an above of the thirteenth century. Pop. 3000.

Hoxter th. on the Weser, in West phalia, Germany, 37 m. N.E. of Pader born Here are Remassance tunber buildings. Near by at Correy is the famous enstellated Henedictine abbev suppressed in 1803. Pop. 7800.

Hoxton (the Hochester of the Domessias Roal) dist of Landon, metropolitan.

day Book), dist. of London, metropolitan bor of Shoreditch, 2 m N.E. of St Paris. In the Elizabethan era it was a pleasure resort. Cabinet-making and upholstery are carried on Pop. 16,686

Hoy (Scandinavian Hoey, high is.), one of the Orkney Is., Scotland, I m. S. of stronness, and separated from the mainand by the Sound of H. Area 53 sq. m., length 13 m., breadth 3 furlongs to 6 m. It uses abruptly from the sea and has magnificent cliff scenery. The cutef heights are Brachrough Head (1140 ft.), W. and Hill (156 ft.), and Cullage Hill (1120 ft.). The 'Old Man of Hoy' is a datached acondaton and 150 ft. bight. Inc.

of 11.20 ft.). The 'Old Man of Hoy' is a detached sandstone rock, 150 ft. high, I m from Roray Hond. There is a good harbour at Longhope. Pop. 1000.

Hoylake, in, and eccles, par. on the Wiral Peninsula, Cheshiro, 8 m. W. of Liverpool, England. There is fine seabathing, and golf, and many Liverpool business men live here. Pop. with W. Kirby 27,700.

Hoyland Nether in in W. Blding, Vol.

Hoyland Nether, in in W. Riding, Yorkshue, England, Al m. S.E. of Barnsley. There are coal mines, rolling mills, brick

works. Pop. 15,200

Byron have alluded to him. His books include: Short Treatise on Whist (1742), Rackyammon (1743), Piquet (1744), Quadrille (1745), and Chess (1761).

Hradec Krālovė (Ger. Königgratz), tn. of Bohomia, Czechoslovakia, on the Elbe, 65 m. E.N.E. of Prague. It is famous for its lattle in 1866 in which the Prussians were battle in 1866, in which the Prussians were victorious over the Austrians: this was known as the Battle of Sadowa. Pop.

known as the Battle of Sadowa. Pop. 52,300.
Hrdlidka, Alek (1869-1943), Amer. anthropologist, b. at Humpolee, Bohemia. M.D., New York Eelectic College, 1892; New York Homcopathic College, 1892; Studied insanity, New York. Accompanied anthropological expeditions, 1893-1913, into all quarters of the world. Assistant curster of physical anthropology, U.S.A. National Museum, 1903-10; and later curator. Member, National Academy of Sciences, U.S.A. and of Czech Academy of Sciences and Arts. Huxley Medal, 1937. Wrote Ancient Man in South America (1912), Recent Discoveries attributed to Early Man in America (1918). The Anthropology of Florida (1922), The attributed to Early Man in America (1918), The Anthropology of Florida (1922), The Old Americans (1925). Also Practical Anthropometry (1920). Skeletal Remains of Early Man (1930), Man from the Farthest Past, 1930. Hroswiths, Hrotsuit (c. 935-c. 1000), Ger. poetess and chronicler. Little is known of her life but she appears to have been

of her life, but she appears to have been a

of her life, but sho appears to have been a Benedictine nun of Gandersheim, near Gottingen, entering the nunnery previous to 959. Here she studied the Scriptures and the classics. Her works, written in Lat. have considerable morit, but great coarseness. They include Lat. legendary poems, six prose Terentian comedies for the entertainment of the sisterhood, of which Callimachus, written in praise of chustity, is the best, and a poetical panegyrical chronicle of Otto I. Her works were ed. by Konrad Celtos at Nuremberg in 1501, by H. Schwizfielsch at Wittenberg in 1501, by H. Schwizfielsch at Wittenberg in 1717, and by Barrack at Nuremberg in 1858. Eng. trans. of the piays were pub. by C. St. John in 1923; H. J. W. Tillyard, 1923. See W. M. Hudson, English Historical, 1888; J. Schreiderhan, Roswithu, 1912; M. G. Wiegand, Nondrumatte Works of Hroswitha, 1936.

Hrozny, Friederich, Czech orientalist;

dramatic Works of Hrosvitha, 1936.
Hrózny, Friederich, Czech orientalist; b. 1879, at Lysá. Has devoted attention chiefly to inscriptions in Hittite language, which he assigns to the Indo-Germanic branch. Pubs. include Die Sprache der Heihiter (1917), Hethitische Keilerhryttetet aus Bophazköi (1919), etc.; Über die Völker und Sprachen des aller Chatti-Landes (1920), Code hittite (transcription and Fr. trans., 1922).
Hsianfu, or Singanfu, cap. of Shensi, China, on the r. b. of the Weiho, 75 m. above its confinence with the Yeilow R. (Hwangho). During the Civil war it was besieged in 1926.

Hsiang, riv. of China, trib. of the Yang-

Hsiang, riv. of China, trib. of the Yang-tsekiang, in Hunan; very important as connecting Kwangtung with Central China. Its W. branch is connected by canal with the Kweikiang in Kwangsi.

Hsiangtau, important dist. and tn. of Hunan China, where produce for Canton (300 m. to the N.) and coal for the Yangtsekiang are trans-shipped. The Hsiang

tsekiang are trans-shipped. The Hslang R. is navigable for junks up to this tn. Pop. upwards of 600,000.

Hslpaw, see Thira.w.

Hslan T'ung, last emperor of China; b. 1905 or 1906. His original name was Pu-yi; he was nephew to Kwang-su, ninth emperor of the Manchu dynasty. His father was Tsai-Fong (Prince Ch'un); and he was selected Nov. 13, 1908, by the Empress-Downger Tzu-Hsl, who d. Nov. 15, immediately after Kwang-sü. Prince (L'un was made regent. The revolution that began Oct. 1911, ended Fcb. 12, 1912, in the estab. of a republic. H. Trotained his title, received a handsome retained his title, received a handsome allowance, and was allowed to remain in the Summer Palace of Peking. In July 1917 he was replaced as ruling Emperor for a few days through the instrumentality for a few days through the instrumentality of Gen. Chang Hsun. He married in 1922. When the Kuomintang obtained possession of Peking in Nov. 1924, they abolished his title and remaining privileges, and he went to reside under Japprotoction at Tientsin. He had cut of his queue, and called himself Henry Pu-yi. In 1934 he was proclaimed emperor of Manchukuo by the Jap. See Pu-yi. In 1934 he was proclaimed emperor of Manchukuo by the Jap. See also CHINA.-History.

Hatchou-tu, see Sui-Fu.
Hatchou-tu, see Sui-Fu.
Huallaga, riv. of Peru, rising in the
Andea, ahout 10° 40° S. It flows generally northward for some 700 m, and joins the Amazon (Marafion) about lat. 5° S., 73° W.

Huambisas, race of S. Amer. half-breeds, belonging to the Jivaroan stock, and dwelling on the borders of Peru and Ecuador on the Upper Santiago and Marañon-Amazon rivs. The Sp. blood in them, shown by their light complexions dates from the sack of Sevilla del Oro in 1599, when 7000 Sp. women were carried off.

Huancavelica, or Guancabelica: (1) opt of Peru. Area 8297 sq. m. The dept of Peru. Area 8297 sq. m. The surface is mountainous and mineral wealth abundant. Pop. 244,500. (2) Cap. of dept. of same name, and of a prov of Peru in the Andes, 150 m. S.E. of Lima.

dept. of same name, and it a prov of Peru in the Andes, 150 m. S.E. of Lima. The chief industry is the mining and smelting of gold, silver, and mercury. Elevation 11,850 ft. Pop. 12,000.

Huangho, see Yellow River. Huangho, see Yellow River. Huangho, see Yellow River. Huangho, see Yellow River. Traversed by the Cordillora Oriental, and watered by the R. Huallags. There is much mineral wealth. Coffee is grown in the dist. Area 15,426 sq. m. Pop. 231,000. (2) Cap. of the above dept., Peru, on R. Huallaga, 170 m. N.E. of Lima. It stands in a lovely and fertile valley. A bishop's see. Pop. 20,000.

Huaraz, cap. of Ancash depts, Peru, on the R. Huaraz, 185 m. N.W. of Lima. Elevation 10,000 ft. Pop. 20,000.

Huasco, or Guasco, scapert tn. in the prov. of Atacama, Chile, at the mouth of the Huasco R. It is the centre of a fine fruit-growing dist, is noted for the grapes and raishns and has considerable coasting treads.

and ruisins and has considerable coasting trade. It is a port for mining products. Pop. about 4000.

Huata, Maori weapon, see under MAORIS. Hubbard, Elbert Green (1856-1915), Amer. writer and printer, b. at Bloom-ington, Illinois, U.S.A. Began his Bohendan' career as a salesman and then wrote a few poor novels. Met Wm. Morris and tried to emulate his ideas on Morris and trad to eminate his decas of printing, decoration and medieval design, producing at E. Aurora, New York, a shoddy initation of the Kelmscott Pr.ss, which he named 'Royeroft,' after the Eng. printer of that name. From this which no named Roycrott, after the Eng. printer of that name. From this beginning he founded, and wrote the material for, an 'in-pirational' monthly magazine, The Philistine (1805-1915), which be used to express his bonnely, often a polytical property of the printer of the pr shrewd, platitudinous philosophy. similar magazine, The Fra (1908-17)— title which he had conferred on himselftitle which he had conferred on hinself—never achieved the great popularity of the earlier pub. In 1894 he wrote A Little Journey to the Home of George Ellot, the first of his monthly sketches, chiefly blographical, issued in 14 vols. covering 15 years and numbering 170 booklets in all. His chief work, however, is his A Message to Torcia (1899)—an essay by which the Cuban lawyer and revolutionary, Calixto Garcia (1836 98), became widely known in the U.S.A. This he followed by Loyalty in Business (1921). By the close of his life his 3 veroft Corporation had greatly developed become a large etab., from which he pub. besides his own books works, many artistic books, hand-illuminated and hand-bound. Nec A. Lano, Elbert Hubbard and His Vork, 1901; and F. Shay, Elbert Hubbard of East Aurora, 1926.

Huber, Johann Nepomuk (1830-79), Ger. theologian and philosophical writer, b. in Munich, where he ultimately became univ. prof. He was leader of the Old Catholics and a bold opponent of the Ultramontanes. His works, Die Philosophie der Kirchenruter (1859), and Der Jeanitorden (1873), were placed upon the Index Expurgatorius. He collaborated with J. Dollinger in writing the celebrated Der Papist und dus Konzil von Janus (1869). See E. Zirngiebl, Johannes Huber, 1881. Huber, Johann Nepomuk (1830-79),

1881.

1881.

Huberman, Bronislaw (1882-1947),
Polish violinist of Jewish origin, b. near
Warsaw. Studied as a child under
Joachim, who advanced his interests. In
1894, after sev. public appearances in
European caps., he played in London.
Made a strong impression on Brahms in
Vienna in 1895. Thereafter his life was
that of a famous virtueso. The creution
of the Palestine Symphony Orchestra
was due to his infilative and was innanced
by him. D. at Vevey.

was due to his inhibitive and was manifed by him. D. at Vevey.

Hubert, Saint (656-727), patron saint of hunters (Day, Nov. 3). Hunting on Good Friday, although a holy day, he saw a cross growing out of the torchead of a stag. This he took as a sign from Heaven, heavens a mank and founded an abber. became bishop of Licgo (Maestricht).

Hubli, tn. in the dist. and 15 m. S.E. of Dharlwar, Bombay, India, has important cotton manufs. and considerable trade. Pop. 90,000.

Hübner, Joseph Alexander, Count (1811–92), Austrian diplomat and author, b. in Vienna. His real name was Hafenbredl, which he afterwards changed to H. In March 1819 he went on a special mission to be the state of the country of the Paris and, later in the same year, was ap-pointed ambas, to France. To his influpointed ambas, to France. cuce was largely due the friendly attitude of Austria to the Allies in the Crimean war. But he was taken by surprise by Napolcon III.'s intervention on behalf of It. unity, of which the first public intima-tion was given by the Fr. emperor's cold reception of H. (1859). He did not return to Pars after the war but in 1865 became ambas, at Rome, which post he left in ambas, at Rome, which post he left in 1867. Ho then toured the world recording his observations in Ein Spaziergung um die Well (1872). His other works are Sixtus V. (1872), Purch das britische Reich, 1853-84 (1886), Ein Jahr meines Lebens, 1848-49 (1891). His works, which are very interesting, show considerable insight into their subjects—whether of litted intrigues of the period or whether of litted intrigues of the period or whether political intrigues of the period, or

whether political intrigues of the period, or Brit. colonial questions or the political ideals of Metternich and Schwarzenberg. Ste Sir E. Satow, An Austrian Diplomatist in the 'Fifties, 1908.

Huo, Evariste-Régis (1813-60), Rom. Catholic missionary, b. at Toulouse, educated by the Lazarista in Faris. In 1839 he was ordained and joined the Lazarist Mission to China at Si-Wang. In 1844 he and Loseph (leich his follow Lazari-t Mission to China at Si-Wang. In 1811 ho and Joseph Uabet, his fellow Lazarist (accompanied by a young Tibetan neoph; to who had embraced Christianity), were sent into Tibet to determine the extent of the new apostolic vicariate of Mongolia. They apent some time in a Lama monastery, learning the language, and in 1846 reached Lhasa after much danger and difficulty. They were, however, expelled and forced to return to China. H. returned to France in 1852 and pub. sev. books on his journey, the most famous being Souvenrs d'un Voyage dans la Tartarie, le Thiebet, et la Chine most tamous being souventrs a un voyage dans la Tartarie, le Thibet, et la Chine pendant les années, 144-46 (2 vols, 1850; Eng. trans. by W. Havlitt, 1871, abbrev. by M. Jones, 1859)—a book which contains passages of so remarkable a character as to excite incredulity; but later research to extree incredinity; but later research seems to have confirmed all that H. wrote. Its supplement, L'Empre Chinois (2 vols., 1854, Eug. trans. 1859), was crowned by the Academy. Le Christianisme en thine (4 vols., 1857-58), is an elaborate historical work. All his works are written historical work. All his works are written in a racy and lucid style which contributed to their unusual degree of popularity. See Princo Henry of Orleans, Le Perè Huc et ses critiques, 1893.

ses critiques, 1893.

Huch, Ricarda (1961-1917), Ger, anthores; b. in Brunswick. Educated at Zurich; took Ph.D. degree, 1891. In 1897, Secretary to State Library Zarich. Married, 1907. Richard Huch, doctor of laws. Pub. vols. of pootry; but most of her work is tales, novels, and hists. or novel-hists.; e.g.: Aus der Triumphyase (1901), Vita Somnium Breve (1902), also Geschichte von Garibaldi (1906-07), Das Risoryimento (1908), Der grosse Krieg in Deutschland (1914), Der Fall Deruga (1917), Im allen Reich (1927-34),

of the R. Coine and R. Holme, 16 m. S.W. of Leeds and 190 m. from London. It is served by rail and by canals. The surrounding dist. 14 rich in coal and fron. H. is situated on the great escarpment of the Lower Coal Measures between two entirely contrasting types of scenery—with farming and mining vils. on the E. and S.E. and, on the W. and S. untamed moors and mosses, mostly uninhabited and rising to a height of 2000 ft. From the tn. itself the prin eminence seen is Castle Hill (900 ft.), crowned by a tower erected to commemorate Queen Victoria's erected to commemorate queen victoria's diamond jubilee. The summit is the site of an anct. Brit, encampment and is scheduled as a National Monument, Stretching over a considerable area the bor, has the advantage of avoiding congestion. Most of the residential areas are within a mile or two from the tin., e.g. the garden suburb of Fartown and Sheepridge, the suburb of Birkby, Fixby, and the semi-rural dists. of Crosland Manor and Almondbury. Among the chief buildings are the par. church of St. Peter, the third on the same site. The first was church was built in 1836. It is in the Gothic style, the tower has ten bells and the windows are ornate with vacred scenes and emblems, notably those by Ward. There are about a score of other Estab. Churches in the tn. and immediate neigh-Churches in the th. and immediate neighbourhood and numerous Nonconformist places of worship. The Tn. Hall and Municipal Offices are virtually one large bandsome block. The Hall (which cost £57,000) is in neo-classical style and beautifully decorated. Ravensknowle Hall (with grounds), Dalton, presented to the tn, in 1919 by Legh Tolson for a museum and park, was built in 1860 by museum and park, was built in 1860 by John Beaumont of Dalton. Attached to the Tolson Memorial Museum is a meteorothe Tolson Memorial Musculm is a meteoro-logical station. There is a Central library near the municipal offices and seven branch libraries. The old Cloth Hall was demolished in 1930 under a tn. planning scheme; parts of the original building, including the pillars, clock-tower and door-way have been re-ercoted at Ravens-industrial centre H. is relatively a modern

Zeitalter des Glaubensspaltongen (1937). In literary criticism: Bulezeit der Romantik (1898), Ausbreitung und Verfalt der Romantik (1992). She was a bitter opponent of the Nazis, and when Hitler came to power in 1933 she resigned from the Academy of Arts and Sciences because she refused to take the oath of allegiance to the new regime. See E. Gillbchowski, Pas Schicksulsproblem bei Racarda Huch, 1925, and study by E. Hoppe, 1936.

Huchtenburg, Jan van (1646-1733), Dutch battle painter and engrayer, b. in Haarlem; pupil of Thomas Wyok and later of Van der Meulen in Paris.

Huckleberry, see Whort i perret, b. in Haarlem; pupil of Thomas Wyok and later of Van der Meulen in Paris.

Huckleberry, see Whort i perret, b. in Haarlem; pupil of Thomas Wyok and later of Van der Meulen in Paris.

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Huckleberry, see Whort i perret, b. in Hall was laid in 1878; it is built in the foundation stone of the present of the Colhe and B. Holme, 16 m. S.W. of Leeds and 190 m. from London. It is served by rail and by canals. The surthe memorial stone of the present building was laid in 1821 and the name, Technical School and Mechanics Institute, changed to Technical College in 1896. In 1995 the College became affiliated with Leeds Univ.; its main depts, are chem. textile industries, civil and mechanical engineering, electrical engineering, physics mathematics, biology, school of art commathematics, biology, school of art, com-merco and economics and domestic science. There are six secondary schools, science. There are six sciendary schools, and primary schools are distributed throughout the bor. At what is now the Huddensfield College (Municipal Boys' School) the late earl of Oxford and Asquith, then known as H. H. Asquith, received his early education, he being a nephew of a former freeman of the bor.

The main sections of local industry are textiles, engineering, cloth dyelug, shrink-ing and finishing, manut, of chemicals and dyestuffs and wholesale tailoring. H. and the adjoining dists, are a natural centre of the weekler and worsted fabric industry of the W. Riding of Yorkshire In the Colne and Holme valleys there are scores of firms, many of them old estab individual, or private enterprises, which for generations have produced textile fabrics generations have produced textue fabrics regarded as their own specialities. In the Coine Valley are many of the larger mills which produce millions of yds. of cloths and tweeds. There are also numerous other trades carried on, notably printing and bookbinding; machine and hand tools; wood-working; sheet-metal working; furniture and cabinet making; rubber fittings; auxiliary textile equipment; brewing; patent glazing; dyeing; pottery; tanning and leather goods; boot and clog making; coach and motor body building; galvanised metal goods brick and cley ware; aerated waters; sports requisites (especially footballs in great quantities); confectionly; hosiory yarns; gas-producing and coking by-products plant; point; darpets and rugs; carrier bags; cardoard boxes; jams and preserves; pre-east cement using; constructional and building industries. regarded as their own specialities. In

tn., it is not entirely without historical la Plata State, Buenos Aires—now associations. It was mentioned in Domesta Book as Oderesfelt, and in Subsidy Rolls, dated 1207, as Huderesfeld but until the nineteenth century it certainly land. The early part of his life was grant and the positive accordance to that of occupied a position secondary to that of Almondbury which is now one of its suburbs. For this reason the historical monuments and associations in the area of the tn. are comparatively few; yet there are some survivals of interest, especially the older houses in the outlying dists, or in the tn. Itself in the courts off the main streets. Almondbury, with its anct, church, stocks, par, registers and pir, chests, and the old built-timbered pienu es adjoining, is much richer in historical associations; so al-o as regards many of the other areas adjoining the tn. of H. A few miles from II. at Lukley is the reputed grave of Robin Hood. The old Three Nuns Hotel is said to be named through the presence of nuns at the former Kirklers monastic estab, over which Hobin Hood's sister is suid to have ruled as abboss. Near by, at Cooper Bridge is the 'Dumb Steeple' commomorating the Luddite seen by, at sooper Bringe 18 the Dulling Steeple' commemorating the Luddite riots. At slack near Outlane, excava-tions have revealed the remains of a former Rom Comp, and smillar work at Castle Hill bas brought to light distinct traces of both Rom, and ther occupation of this hill a a natch towe, or camp and fortices.

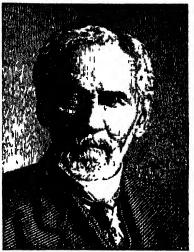
Hudnall Common, open space of over to see, Situated between Ashbudge Park and Whipsi ade, Heitfordshire, and

noted for its bud- and flowers.

Husson, George (1800 71), Eng. railway piomotor, the Rulway king, b. at Howsham, Yorkshire 116 started life 94 a linen draper, but in 1828 inherited a fortune of £50,000 this allowed him to interest himself in tailway promoting, with very successful results, and he became the dictator of rallway speculation. But the railway crisis of 1847-48 proved his rum, for he was accused of froud. Carlyle alluded to him as "the

Dutch E India Company, to discover the N.E. and N.W passages in 1607-10. In 1609 he explored the Hudson R.—On his last voyage in 1610 he discovered the Bay and Strait which are named after him. Early in 1611 his crew mutimed, and set him and his son with seven others adrift nim and his son with seven others addiff in a small boat, and nothing further was heard of him. The Last Voyage of Henry Hudson' is the title of John Collier's famous and pognant piture of the doomed navigator and his crew. See C. Asher, Henry Hudson, the Navigator, 1860; and studies by T. A. Janvier, 1909, and L. Powys, 1928.

la Flata State, Buenos Aires—now absorbed in Argentina; son of Daniel H. native of Marbiehead, Mass.; and grandson of Daniel H., native of Exeter, England. The early part of his life was spent on an estancia of the Argentine pampas. H. left S. America, 1809, and thenceforth resided in England. His wife, a musician (d. 1921), was much older than himself; they lived in various houses in London, tent on long given like tempers. went on long gipsy-like journeys into the country, and were sometimes in want. In 1901 H. was granted a Civil List pension, which he relinquished when his circumstances improved. H. writes as the



W. H. HUDSON

big swollen gamble?

Hudson, Henry (d [611), distinguished garres grows.' He saw life as an numerose Eng. navigator. Re was employed by the complex flow of custiveness and in the Muscosy Company, and later by the decreining nature and especially bird life, the critical acts by the best person model. he expired a style that has been a model for this century. His observation com-braid scientific detachment with intense intuitive perception. 'Lew men have left a monument more permanent than Hidson left in he own books, wrote conningham Graham His works, which fall roughly into the two categories of S. America and Eng., include The Purple Land which England Lost (i.e. Uruguay, Honey Hudson' is the title of John Collier's famous and pognant puture of the doomed navigator and his crew. Itself and the form of the doomed navigator and his crew. Itself and studies by T. A. Janvior, 1909, 1860; and studies by T. A. Janvior, 1909, 1873, 1873, 1874, 1875,

A Hind in Richmond Park (1922). A Hind in Richmond Park (1922). Ho d., in London and is commented by the Bird Sanctuary with Epstein's 'Rima' (after the bird-woman 'Riolauco' in Green Mansions) in Hyde Park. See life by M. Roberts, 1924. See also F. Rhys, W. H. Hudson, Rare Traceller, 1920; R. Charles, The Writings of Hudson, 1935. Hudson, cap. ot Columbia co., Now York, U.S. A., on Hudson R., 28 m. S. of Albany. It has a large riv. trade and numerous manues, of engines, paner. Ho d.

Albany. It has a large riv. crace and numerous manufs. of engines, paper, leather, flour, clothing, knit goods, tobacco. Founded in 1783, and formerly a whaling port. Pop. 11,500.

Hudson, tn. of Middlesex co., Masanchusetts, U.S.A., on Assabet R. 15 m.

N.E. of Woccester. It has manufs. of leather pubber shoes, webbing, gos-amors, N.E. of Wolcester. It has manuer, of leather, rubbet shoos, webbing, gos-amers, paper boxes, lasts, etc. There are wool scouring and combing mills. Pop. 8000. Hudson, rlv. of New York, U.S.A. Rises in the Adironduck Mis., and flows

Rises in the Adirondack Mts., and flows about 350 m., roughly, in a southerly direction, into New York Bay. Its estuary, known as N. R., forms part of New York Harbour. It is navicable for small boats up to Glen Falls (200 m.), for small steamers to Troy (151 m.), and for large steamers to H. (117 m.). Much of the scenery on its banks is very flue, especially in the highlands of the H., part of the Appalachian Hange, below Newburgh. Chief tribs., the Mohawk, Walkill, Hoosic, and Sacondaga. It was first explored by Henry Hudson in 1609, and the first successful Amer. attempt at steam navigation was made upon it in 1807.

1807.

1807.

Hudson Bay, or Canadian Sea, inland sea of the N.W. of N. America, communicating with the Atlantic Ocean by Hudson Strait and with the Arctic Ocean by Fox Channel, Fury and Heela Strait, and the guif of Boothia. It lies entirely in Brit. ter., having Manitoha on the W., Ontario on the S. and Southenwitch Is on the N. ter., having Manitoba on the W., Ontarlo on the S., and Southaupton Is. on the N. A long narrow arm in the S. is known as James Bay. Area about 500,000 eq. m., length 80 to 1300 m., greatest width 600 m. It occupies a basin in the old Laurentian area, and is mostly shallow, with low shore-lines, especially in the S. and W. The average depth is 70 to 100 fathoms. The E. shores are rocky, and steep bluffs occur here and occasionally in the W. A chain of small is, here ally in the W. A chain of small is, her off the E. shore. There are few submerged rocks or shoals, but 'ee renders navigation impossible for three-fourths of the year. The climate is very rigorous of the year. The chimate is very rigorous in winter, but mild and pleasant during the short summer. The bay is the great drainage area of the Canadian N.W. Ters., and is fed by the Rs. Churchill, Nelson, Albany, Main, Rupert, sovern, and Moose, Three are fisheries of salmon, seal, whale, and walrus, and the surroundsear, whate, and warres, and the surround-ing country is rich in minerals and fur-bearing animals. York Factory is the chief port. The hay was discovered by Henry Hudson in 1610. He wintered in James Bay, and the next year was abandoned by his mutinous crew. See F. H. Kitto, The Hudson Bay Region, 1829.

Hudson's Bay Company, Eng. chartered company incorporated by Charles II. in 1670 and founded by Prince Rupert and other adventurers for the purpose of trading with the N. Amer. Indians on the shores of Hudson Bay. The estab-of the Amer. fur trade seems to have been due to the demand in the European mrkt. for large felt hats adorned with fur which hecame the vogue from the time of Charles I. In the search for the N.W. Passage Henry Hudson, by discovering the bay which is named after him, had found a route to the very edge of what is the greatest fur forest in the world. But Hudson died without being aware of what the hed accomplished. It remained for the Sicur Médart des Groseillers and his brother-in-law, Pierre Radisson, and through them the founders of the H.B.C., to reveal the value of his discovery for the fur trade. The first achievement of Groseillers, an Indianised Frenchman, was to penetrate to the Great Lakes and induce the Hurons to bring furs down to the St. Lawrence. It was then that he found that the Crees of the great N. forest were the real source of the fur supplies which reached the Fr. in the S. The Fr governor refused to issue to Groseillers a heener to journey thither, except on the condition that he received half the profits. condition that he received nuit the pronts. Groselliers and Radisson therefore went independently and returned (c. 1663) with a great supply of furs and were then charged and fined for fillelt trading. Falling to obtain redress in France the two men repaired to Boston to visit Sir George Carteret. Privy Councillor to Charles II. and through him they ultimately reached Windsor as guests of the king, who was equally interested in their king, who was equally interested in their proposals for a trading expedition in N. America beyond the confines of England's America beyond the confines of England's Amer. colonies. But progress was slow, and it was not until 1667 that Prince Rupert, the king's cousin, took up the project, with the co-operation of the duke of York (afterwards James II.) the duke of Albemarle, the earls of Arlington, Craven and Shaftesbury, Sir George Cartetet and James Hayes, secretary to Prince Rupert. All these were the original subscribers to the initial cap, of about \$110.000 and the commany's hist, really £110,000 and the company's hist, really begins at that date, when a convorted ketch, the Nonsuch, with Groselliers, salled for N. America, reaching James Bay on Sept. 29, 1869. The king loaned the naval hoat Eaglet which sailed with Radison, but at the local transfer. Radisson, but at Hudson Straft the Eaglet Radison, but at Hidson Strait the Eaguer was too damaged to proceed further. In St. James's Bay Groselliers then built Fort Charles—really only a poor log hut with a stockade, yet veritably the cornerstone of a great trading empire. Grosellers (called Mr. Gooseberry by the Kng.) soon sailed again with the Nomuch laden with firs. This successful Yoyage constitutions. with furs. This successful voyage confirmed the hopes of the courtier adventurers, who now applied to the king for a Royal Charter. This was granted on May 2, 1670. Wide imperial powers were conferred on the Governor and Company of Adventurers of England Trading into Hudson's Bay.' Rights to 'sole trade

and commerce within the entrance of the Hudson Strait were bestowed by Charles upon 'our dear and ontirely beloved cousin Prince Itupert' and his associates, who, according to the Charter, were to be 'the true and absolute Lordes and Proprietors' over more ter than was then even known to Luropeans. In pro-ont-day geographical terms, the Adventurers were granted the Provs. of Ontaine and Quebeo N. of the Laurentian Hills and W. of Labrador boundary all Mantoba and Saskatchewan, the half of Alberta and the SE corner of the NV Ters It proved to be a will drafted (harter for it validity in the law courts. The ki in Quebeo and Montreal soon took up the quebeo and montreat soon took up the challenge of the I ng entry into the Amer fur trade from the N and for nearly a century the king and I r. struggled for the trade, in a long drawn period of war, with intervals of peace, lasting till 171; these intervals being accompanied by out breaks of violence on the shores of the bay These were for the most part mere forest skirmishes, insignificant as measured in terms of military operations, but they were significant in the hist of Canada, and the fact that the company defended ing interests for so long served the Com pany in good stead wit i the Charter Rights came to be considered by a Pari

Committee in 1749
By 1680 there were forts at Rupert R., Moose, and Albany, Factories in James Bay, and Fort Nelson (or York Factory) on the W coast of Hudson's Bay. Sev on the w coast of fluoson's Ray. Sev of these were taken by the Chevalier de Troyes and in 1697 as the result of a sea right when the Sieur d'Iberville's ship Pelican off York Lactory defeated three Eng ships under Captain Bailey who was in command for the company The company was then left with but a single roset out the how Albany Ragtery. post on the buy, Albany Factory The Treaty of Rywick brought peace to Hudson's Bay but it left the company almost ruined Two notable mames in amost rumou I wo measile names in the hist of the company at this period were those of Henry kelsey, who entered as an apprentice in 1684 and undertook a journey into the practic lands, and James Knight, who was one of the first to estab discipline both w thin the forts and in the relations with the Indians. Kelsey is notable as the first of the company's servants to establish that understanding, which was to prove the most powerful factor in the development of the fur trade factor in the development of the fur trade in Canada. His Journal's became the subject of political and later historical controversy which was only finally cleared up in 1926. From 1697 1713 (Treaty of Utrecht) the company's sole post on the Bay was Albany. The duke of Mariborougi, whose victories culminated in the Treaty of Utrecht, had been a governor of the company. The Treaty brought the bay forts back to the company and the reafter the company was to have nearly eventy versy of personnel.

and commerce' within the entrance of | Factory at the mouth of the Churchill R. to enable the Chipewvans from Great to the bay Thus was Churchill (then

to the bay Thus was Churchill (then called Prince of Wales's Fort) estab Meanwhile the ir through Pierre de Varennes, Sieur de Verendrye, renewed attempts to accure part of the fur trade, W of the Great Lakes, and set up a number of trading posts in the W Prairie, a challenge to the chartra and rights of the ill BC From 1754, therefore the company's servants began to ponetrate the W. Flus, Anthony Henday travelled for a year with Indians, going as far as the Rockies. A notable name in the company's annils of this period was that of Samuel Hearne, who began as mate in a company whaling ship and later (1776) was stationed at Prince of Wales a Fort on Churchil R. a stone fortress which had replaced Knight's wooden fort on Church-Hourne was the first white man to reach the Arctic sca from the interior, having reached the mouth of the Coppermine R This stone fort had only been completed in 1771 after nearly forty years labour but in 1782 Hearne, the governor, surrendered it to La Perouse without firing a shot —he having only thirty nine men in the garrison. The Fr attempted to blow up the fortress without success. The main walls of this very strong fortress survive as an historic site owned by the Dominion of Canada.

It was about the year 1784 that saw the dawn of the historic rivalry of the N. V. Company, which was destined to become the strongest of all the H.B.C.'s competitions. This competition was in effect that of the Hudson Bay and the Montre il routes for the trade of the great fur forcet. But subjects in Montreal fur forest Brit subjects in Montreal following La Vérendrye's precedent, built po-ts among the Indians and again dive ted trade into the Montreal route. In 1774 the H.B.C replied by building Cumberland House, near the House, near the Saskat-Among the well-known chewan R. names of the pioneer traders of the N W. (ompany were those of Problaher, Alexander Mackenzie, Mckay, McLoughin, all courageous and enterprising Scottish-(madian traders from Montreal, who and the Rockies into the Arctic Ocean in and the Rockes into the arrive crean in defince of the monopoly rights of the H B C. Forts were built in juxtaposition at trading points but before the two empanies were in riged in 1821 there was to be violence and bloodshed, arrests and itugation. It was Alexander Mackenzie, nest famous fur trader of his time, who that went up the Peace R. (1793), was knighted after the pub of his Foyages and produced a plan for the union of all the fur trading interests in one great chartered company having the use of the Hudson has route and he tried to buy out the been a governor of the company. The law route and he tried to buy out the treaty brought the bay forts back to the H B C, through Lord Selkirk, who then company and there after the company was controlled the company. But Selkirk controlled the company but Selkirk controlled the company wedderburn trading. In 1715 Knight sent Wm. (Andrew Colvilo) i reorganising the Stewart into the interior as an arbitrator of peace with the Indians, notably the Colony Scheme (1812) This colony was Crees. Knight built a post N. of York taken over by the H B C. in 1836, with a company's charter—a governor and council appointed by the governor and committee in Loudon The union of the two companies was accomplished by a deed of co partnership and this developed

form of government in harmony with the Brit N America, became the dominant company's charter—a governor and body of the whole structure of (anada council appointed by the governor and ommittee in Loudon

The union of the applied distipline and too numended properties the committee in Loudon. motions It was a structure unique in commercial hist, combining trading rights with a sovercighty under the Brit doed of co partnership and this developed commercial list, combining trading into the union, which eliminated wasteful ights with a soveright version of the company at the company at the to the soil was recognised by all patties to the soil was recognised by all patties from the company cutered upon a great period of its hist, which was to continue till the transier of Rupert's Land to the magnition especially in the field of



sion of the Green raid () rister of Hiden 1 is (on ins Keproduced 11 THE COMMANY STORY AND MAN AND STORY STORY OF THE PROPERTY OF T) THE OCCUPATION OF THE OCCUPANT

Dominion of (anad) It 1871 Parlia ment proved an Act and u.z for the monopoly of the regions der bid as the NW fer to be given to an company undertaking to fulfil cert un on litions The li ence conveying the non-poly was given to the united compary subject to the freaty with America of 1818 which gave America pull rights [1] do W of the Rockies. The emplie over which the company now held admin to they as well as freeding to the restriction. as trading lowers included all modern Canada except the Great Lakes basin and

exploration riads him the greatest full fur traice

In the ting of the NW Company the Amer began of acquire tights in the region of the Company the Astor Pacific Company bought out the Astor Pacific Fur Company which had estably posts within the mouth of the riv and up to kamloo but both countris claimed the soveteighty of the lind. An igree ment was tranged in 1818 by which each nation recognised for ten verify the others as trading powers included all modern remained accept the Great Fakes basin and the Maritim Provs The supi in executive contribution in the many many to the Maritim Provs The supi in executive contribution in the supi in executive contribution in the superior and committee, representing the shareholders or proprietor as they are still cilical Cuder Sir George Simpson who was appointed governor in chief of Ruperts I and, the council of the Nicpt of cilizen when his vast domain became part depts into which the company divided of chief factor and colonial governor, carried on McLoughlin's work and later became governor of the grown colony of vancouver is and of Brit Columbia It was after the Origon cusis and Treaty that the Brit Gov decided to form a Brit colony on the is of Vancouver and the task of founding the colony was assigned to the H B C by a grant dated Jan 13 1349 which the company did by offering the land on terms which could be attrac-tive to none but Lughshmen desiring to be gentlemen farmers. I ollowing Amer charges against the H B C of innladmin istration designed to break the company s more opely, there was an inquiry by a parl committee (15.7) and it was as a result of this inquiry that Vancouver Is was made a crown colony Sir George Simp son was one of the prin with 544 at the inquiry, and among the members of the committee were Wm I wart Gladstone Lord Stanley and Lord John Russell Colebrated explorers and trivellers, in Celebrated explorers and travellers, in cluding John Ross, (a) Leftoy Sir John Richardson, and Dr. Rae were among other witnesses, and the committees to port, which was adopted by perhament, found that a mada's wish to assume the land of the W. for settlement was reason able and that arrangements should be made for their ecosystem of mada, and that where settlement was impracticable, the U.R. obenit remaining control. the H B (should remain in control

thus the end of the company's mono poly was in sight su George Shippson died in 1800 but the company exerced in actualers of the W under the crown until 1869. When Contederation became political reality it was evident that the and of the conginys administration of Rupert a I am I was approaching and provision was made by the Brit N America Act of 1867 (clause 146) for the admiss on of that ter (then the company's land) and the NW Ters (crown domain' into the Confed ration The Rupert's Land Act of 1868 laid down the procedure Under the cusuing agreement (anada ; iid £300 000 as compensation and one twenticth part of the land in any township settled within the fertile belt. By the Deed of Surrender of 1869 the company By the did not give up its hos il Charter but only certain of its triding privileges. The final transfer of land to the company under this deed was not completed until 192) or after six years after the date of surrender, under which the company was allowed the privileges of a private triding corporation without hindrance or exceptional taxation — the Deed brought to the company an arcs in the fertile belt of up in many of the fur trading areas and the company a posts in numerous places have become departmental stores 1934 2,000 000 ac cattered thr 1934 2,000 000 ac cattered through Manitobs, saskatchewan and Alberta remained unsold The Land Dept of the company administers this huge estate which includes extensive lots in city

the charter of 1670, which had served its purpose for 200 years, had outlived its time. In 1863 the International Finan-cial Society had secure denough stock to control and reorganise the company and up to 1920 there had been the supplemental charters regularising changes in dealings with the company's stock and reflecting the actual business carried on by the company. With the outbreak of the First World War the HBC was called upon to engage in activities far that it was the part of the p greater than at any time during its hist, including eg the organisation of steam ship services for the transport of goods to Figure and during 1915 19 it handled some 13 000 000 tons of supplies and operated over a million tons of shipping. In HBC continues to conduct its that ice exampt from the provisions of th Companies Act of Great Britain t deputs governor, and com (or board of directors) have g won t m tt c direct difficompany safans in unbroken continuity since the incorporation. To day if is executive group of nine is elected dus the executive group of nine is cheted by the proprietors at the ann general court. The Board meets regularly in Histen Bay House Loudon, adjoining which is the church of St. Ethelburga the Vin within Bi hopsgat (c. 1400-1450) which it has Hudson received committen on April 1) 1607 shortly before Simp on his first voyage of discovery our 1501 the company subarraine anada. 1 16 icen under the administration of a the first index the reministration of a to the committee to an inition served in an advisory equity. The Conadan committee is rest to the governor deputy given and committee it meets in H is mean House, Winnings, where it is in the stroffices as a central organisation of canada. Hudson Bay House, Winnings and house, when we had a the headquestics of the with n in Canada Hudson Bay House, With inpeg is also the headquarters of the for Canadian Depts of the company— Fur Irade Iransport land and Dit stores (see Hudson's bay Com-ic, A brief H try issued by il im a Bay House London, 1994) Sci Mackenic I riggs from M in real it to three St. Laurence Through the nent of North Turner a to the Fresen in and the Prife in the years 1789 and 1801. W. Living Istoria, or I rives Beyon the Locky Mountains, 1 rives Beyon the Locky Mountains, 1 b I Dunn II by of the Oregon I rivery and brite i with America Fur I rite, 1844 Suppon, I fe and I rite of I home impson, The Artio Prisonerer 1815 Sig G Simpson, Ir icls of Thoma. impson, The Artio Insolerer 1835 SIG Simpson, Viriative of a Formy Rund the World Faring the Fear 1841 and 1841, 1847 A Ross, Fur Hunters of the Far Best, 18 and The R d I were settlement, Its Inst Progress and Fesch State 1856; B Milton and W. All The Northwest I sage by Land 1860. A. Herr The William of the North West I story of the North West, 1895 W. Be kles, The Great Company, Being the History of the Hon with Company of Merchant Adventurers I ruding into Hudson's Bay, 1900 & W. Holman, Dr. John McLoughlin, the Futher of Oregon, 1907, R. H. Cost's and R. E. Gosnell, areas. The company's talle to the land "irrchant Adventur": I rading into Huditoffers for sale is direct from the crown on's Bay, 1900 F V Holman, Dr and is therefore guaranteed by the Prov John McLoughlin, the Futher of Oregon, and Dominion Govs. By 1869, indeed, 1907. R. H. Coat and R. E. Gosnell,

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Hudson Bay Territory, see NORTH-

WEST TERRITORIES

Hue, fort. tn., is the cap. of Annam, Fr. Indo-China. It is on the Hue it., 10 m. from its mouth, and carries on considerable trade through Thuanan. It is surrounded trade through Thuanan. It is dirrounded by a wall and moat, and contains an old palace. It was at if. that the treaty establishing a Fr. Protectorate was signed, Feb. 23, 1886. Fr. troops occupy part of the citadel (called Many-Ca) of II. There are normal and secondary schools. In the revolutionary disturbances in Indo-China which followed the capitulation of Japan (1945) H. was a centre of Viet-Nam revolt, the Court of H. having sealed its own doom during the world war by railying to the Jap. The Fr. garrison of H. was attacked at the end of 1946 but gradually, with the arrival of reinforce-ment, the Fr. gained the upper hand. Pop. 15,000.

Hue and Cry, old phrase derived from the method of pursuit of felons by the general public, as provided for in common law. Also the title of a gazette containing the names of deserters, persons charged with crimes, etc. pub. in 1710 Hueffer, Ford Madox, see FORD, FORD

MADOX.

Hueffer, Francis (1845-89), musical critic, b. at Münster Westphalia; educated at Göttingen. In 1882 he was naturalised as a Brit. subject. In 1886 he became and thereby precipitating a state of

editor of The Musical World, and musical critic to The Times (1879). He was the aportle of Wagner in England, and publichard Wagner and the Music of the Future (1874), The Troubadours (1878), etc. In 1888 he issued a trans. of the Correspondence of Wagner and Liest.
Huckbustenang. In. in the dent of

Hushustenango, tn. in the dept. of Guatemala Central America, is the cap. of H. dopt., 106 m. N.W. of Guatemala. It is the centre of a lend-mining dist., and

quite near are the rules of an old Indian city. Pop. 10,000.

Huelva: (1) Prov. of Audalusia, Spain, bordering on Portugal and the Atlantic Ocean. Area 3906 sq. m. Much of the surface is occupied by the Sierra Morena. surface is occupied by the Sierra Morena, and it is watered by the Lepe, Odlel, and Tinto Rs., and tribs. of the Guadiana and Guadalquivir. There are rich deposits of Gnadalquivir. There are rich deposits of fron and copper pyrites, and valuable mineral waters, while some dists, are very fertile. I'op. 374,200. (2) Cap. of above prov., on the estuary of the Odicl and Tinto Rs., 49 m. S.W. of Soville. The harbour is large and safe, but the entrance is partially blocked by a bar. There is a large export trade of metallic ores and agric, produce. Pop. 58,000. Huereal Overa, or Huereal Obera, tn. in Spain in the prov. of, and 40 m. N.E. of, the tn. of Almeria, is near an important mining dist. and has considerable trade

the tn. of Almeria, is near an important mining dist. and has considerable trade in agric. produce. Pop. 16,367.

Huerta, Adolfo de la, was governor of the Mexican prov. Souora when it seceded, April 1920. When revolution displaced Carranza on April 23, H. became provincial president of Mexico: confirmed in office (after Carranza's assassination) May 21. He was only a stop-gap—Obregón being inaugurated in Dec.

Huerta, Victoriano (1854-1918), Mexican president and generalissimo, b. at Colotian of Indian parents. Educated in the Military College, Mexico City, as a result of the interest taken in him by Juarez the Mexican President. Became

Juarez the Mexican President. Became a lieuxmant of Engineers in 1877, after a most successful career in the College. On active service in various parts of Mexico 1878 1912, being promoted to the rank of general in 1901. His prin. service during this period was to suppress the Chihuahua rebellon in 1912. Made military com-mandant of the Federal Dist. in Mexico City in 1913. When Lascuram resigned. Huerta became Interim President. At this time the ex-President Madero, who was awaiting trial for treason, was, to-gether with Suarez, the ex-Vice-President, murdered while being conveyed to the Penitentiary. For this act, which may or may not have been instigated by him, II. incurred the utmost odium throughout the U.S.A. and his protracted conflict with America may be said to have begun from that date (Feb. 1913). Gen. Carranza aided by Gen. Villa, headed rebellious against him after he had been confirmed in office. No efforts on the part of President Wilson at mediation were successful in reconciling the insurgents with H., whose ruin was completed by his own folly in repudiating the National Debt

War, in which the only part he played was to endeavour to lead a revolutionary

force into Texas.

Huesca: (1) Prov. of Aragon, N. Spain, bounded on the N. by France and on the bounded on the N. by France and oil the R. by the prov. of Lerida. Area 5819 sq. m. Pop 224,500. (2) Cap. of the above prov. on R. Isuela, 45 m. N.E. of Saragossa. It is pleture-quely built on a height above a fertile valley. The Roms. how it as 0-sca, and Sertorius was nurdered here in 72 B.C. The tn. was nurdered here in 72 B.C. The tn. was nurdered to the Arebs and the kines important under the Arabs and the kings of Aragon, and part of its old walls still or Aragon, and part of the old wans store the Gothic cathodral (1300-1515), the univ. (1354), and the anet. palace of the kings of Aragon, where the 'Massacre of the Bell' occurred in 1136. Pop. 11,600.

Huescar, city in Spain, 68 m. N.E. of Granada. Manufs. woollen fabrics. Pop. 8300. 8300.

Huet, Pierre Daniel (1630-1721), Fr. scholar and churchman, b. at Caen. In 16,2 he visited the Swedish Court in company with Bochart, and discovered at Stockholm the famous Origon MS., which he ed. in 1668. It is it is and Bossuet were appointed tutors of the Dauphin. were appointed tutors of the Pauphin, and prepared an ed. of the classics for their pupil's use. He took orders in 1676; became abbot of Aunay (1678), bishop of Soissons (1683), bishop of Avranches (1692), and abbot of Fontenay (1699). In 1701 he settled in the Jesuit College in Paris. His works include: De Interpretatione (1661), a collection of poems (1664), Denunstratio Evangelica (1679), Trailé de la Faiblesse de l'Esprit Humain (pub. posthumously, 1923), etc.



anarchy and disorder which was only Florence. His father was Baron Karl remedied by active Amer. intervention. Ho resigned in the summer of 1914, just Baron Karl was Anstrian minister at Bersets, R. 1860-67. Friedrich was never Brussels, 1860-67. Friedrich was never at school or univ.; an attack of typhus in 1871 left him deef. He received instruction from the historian Reumont, was influenced by Abbé Huvelin and W. G. Ward. He became naturalized subject of Great Britain during the kirst World War. He was foremost Catholic scholar in England of his time, after Lord Acton. Although at one time suspected of Modernism and certainly liberal in thought, he was nevertheless loyal to the church, his whole life and practice being inspired by her teaching and doctrine. Everything whole life and practice being inspired by her teaching and doctrine. Everything he did was 'to be in the mind of the Church.' Works include: The Mystical Elmant in Religion (1908-09), teternal Life (1912-13), The German Soul, etc. (1916), Essays and Addresses on the Philosophy of Telegion (1921). See B. Holland (ed.) Selected Letters of Hugel, 1927; Gwendolen Greene (ed.) Letters to a Aiece, 1928; Algar Thoroid (ed.) Readings from Friedrich von Hugel, 1928; Hugelsecote, par, in Coalville urb. dist.

Hugglescote, par. in Coalville urb, dist., b m 5.k. of Ashby-de-la-Zouch, Leicestershire. It has collieres. Pop. 6500.

shire. It has collieries. Pop. 6500.
Hughenden, or Hitchendon, par. in
Buckinghamshire, 1 m. N. of Wycombe.
Il. Manor was the residence of Disraeli.
He was buried in the par. church which
contains a monument to him orected by
Queen Victoria. Pop. 2500.
Hughes Capet, see Ciplit, Hughes.
Hughes, Charles Evans (1562-1948),
Amer. lawyer gud statement.

Amer. lawyer and statesman, b. at Glen Fulls, New York, son of Rev. David Charles H. Educated at Colgate and Brown Univs., and the Columbia Law School. He was prof. of law at Cornell Univ., 1891-93. In 1905 he won prominents nence as the attorney for the Armstrong Legislative committee, which investigated the methods of the life insurance companies incorporated under the laws of New II. became the mevitable candi-York. date of the Republican party for governor of New York. He was duly nominated in 1906, and the Democrats nominated W. R. Hearst, the new-paper proprietor. H. was elected, and re-elected in 1908. In 1910 President Taft appointed him an additional for the U.S. Supremental Control of the U.S. Suprem associate Justice of the U.S. Supreme Court. In 1916 the Republican party again nominated him and ho at once resigned from the U.S. Supreme Court and began a vigorous campaign. On the night of the election on Nov. 7 it was found he had carried the whole of New England evcopt New Hampshiro, Now York, New Jersey, Indiana, and Illinois. It was assumed that H. had been overwholmingly had the better that the control of the cont elected; but the far W. states were still of the Democratic slogan about Wilson—ile kept us out of the War.' For sev. BARON VON HÜGEL

BARON VON HÜGEL

Hügel, Baron Friedrich von (18521925), Catholic religious writer; b. at had lost his great opportunity through the

failure of his managers to mend the breach in California, but even in other parts of the country he did not obtain the support that had been expected. He then returned to the practice of the law in New York, where, upon the United States' entry into the war, he acted as member of the draft appeal board and took charge of the draft appeal board and took charge of an inquiry into aircraft. In 1921, when President Harding held the reins of gov., he made II. secretary of state. The most notable event of his term was the arms conference held in Washington in Nov. 1921. As president of that conference he did much to bring about an agreement that led to a closer understanding between the United States and Great Britain. There was also the four-power treaty bethere was also the four-power treaty between the U.S V. Great Britain, France, and Japan regarding their is, possessions in the Pacific, and the cancellation of the Anglo-Jap. alliance. H. held on as secretary of state for a time under President Coulding and the section of th Coolidge and then resigned to resume the practice of law. He was Judge of the Permanent Court of International Justice, Permanent Court of International Justice, The Hague, 1923-30; President of the Amer. Society of International Law, 1925-29; and Chief Justice of the United States, 1930-11. An impartial judge he found himself compelled, like his nuige he found himself compelled, like his associates, to declare invalid and unconstitutional a great number of the laws passed by Congress at the histance of President Frayklin Roosevelt as parts of the 'New Deal.' He pub. The Pathway of Peace (1925), The Supreme Court of the United States (1929), and Pan American Peace Plans (Yale Univ. Lectures, 1929). Hughes, David Edward (1831-1900), Anglo-Amer. inventor, b. in London; went to Virginia in 1837; in 1850 became Prof. of nuisic at Bardstown College. Ken-

Prof. of music at Bard-town College, Kentucky. His inventions include an improved telegraph type-printer (1851-55), and the microphone (1875), which wasproduced almost simultaneously by Ludtge. He was made F.R.S. in 1880, gold medallist of the Royal Society in 1885, vice-president of the Royal Institution in 1891, and Albert medallist of the Society of

Arts in 1893.

Hughes, Sir Edward (c. 1720-94), Eng admiral b. at Hertford and entered the navy, 1735. He assisted in the attacks on navy, 1753. He assisted in the attacks on Cartagena and at the taking of Louisburg and Quebec. He became commander-in-chief in the E. Indies, 1773. During 1782-83 ke had five encounters with the Fr., and was made admiral in 1793.

Hughes, Hugh Price (1847-1902), Weish Wesleyan mmister, b. at Carmarthen educated for Wesleyan Methodist ministry at Richinond College. In 1884 he became prominent in London at Brixton Hill as a leader of the Forward party, and in 1885 started the W. London Mission. In 1885 he became editor of the Methodist Times. in 1896, first president of the National Council of the Evangelical Free Churches, and in 1895 president of the Wesleyen Methodist Conference, See life by his

dangkter, 1904.
Hughes, John (f. 1869). Welsh iron and shipbuilding mester. After his apprenticeship in Ebbw Vale, Wales, he

estab. a factory at Newport. Then directed a Miliwall iron and shipbuilding yard and made the Miliwall shield, a resistant armour which interested Russia, Toured the Russian mines, and, in 1869, founded a company to supply all Russian railways with iron. Before the 'Hughes works' were set up with 3000 men employed, there had been a vast stoppe with primitive peasants and 'tchumaks' or carriers driving bullocks for grain transport. The H., father and sons, came to the Don country, which then soon outstripped the Irals of those days with many iron-works. The contre was named Hughesovka or Yuzoika. This in, ultimately was renamed Stahno (a.p.) resistant armour which interested Russia.

mately was renamed Stalino (q.r.).

Hughes, John (1677-1720), Eng. poet b. at Mariborough, Wiltslire, and educated in London. He became a clerk in the ordnance office. He was delicate, and suffered mach from poverty til his appointment as secretary in the Court of Channery. His best work, The State of Danascus was produced at Drury Lane Theatre (1/20), but he died the same evening from consumption. Besides his access to the best of building the same of the same evening from consumption.

evening from consumption. Besides his poems, he wrote a History of England (1706), The Works of Mr. Edmund Spenser (1715), and contributed to sevengeriodeals. See S. Johnson in The Lices of the Ports, vol. ii., 1784.

Hughes, Richard Arthur Warren (b. 1900), Welsh suther. Educated at Charterhouse and Oriel College, Oxford. Earliest work was The Sister's Trayady (play) and Gipsy-Night and other poems) both pub. in 1922. These were tollowed by A. Comedy of Good and Evil (1925) and Confessio Jurenis (collected poems) (1926). H. was the list dismutist to (1926). H. was the first dramatist to write specially for brondensting and he write specially for boundaring and no has been associated with the Welsh National Theatre. He is, however, best known for two nosels: 1 High II ind in Januara (1929) and In Huzard (1938): the first-named being a story of some children who fall into the hands of modern pirates, notable for its original narrative style and for its convincing interpretation ot the monitor the convincing interpretation of child mentality; the second, a vivid story of a ship's adventures in a burricane, Other works: A Monunt of Time (short stonics, 1926), Collected Plays (1928), The Spider's Palare (stories for children, 1931), Don't Blame Me (1910), City of Angels (1941), and Her Fabulous Fortune (1941) (1913).

Hughes, Sir Sam (1853-1921), Canadian general; b. at Darlington, Ontario, Educated: Toronto, Normal School and Univ. In S. African War he was Assistant inspector control of communications; attenuards chief intelligence-officer to Sir Chas Warren. In 1911 be was ap-pointed minister of militia and defence; and he had a great deal to do with pre-paration of Canadian force that fought in the First World War. K.C.B. and major-

general, 1915.

Hughes, Thomas (1822-96), author, began life as a barrister and a follower of Frederick Denison Maurice and other leaders of the Christian Social School. He was a founder of the Working Men's College, and prin. of that institution from 1872 to 1883. He sat in Parliament from 1865 to 1874, and was a co. court judge from 1882. The author of sev. books and many tracts and essays, his fame rests entirely upon Tom Brown's School Days, pub. anonymously in 1877. It is a simple story of public-school life, admirably presented, and underlying it is a strong, sound religious sense, that had the greater influence for not being unduly obtruded. See M. L. Parrish and B. K. Mann, Charles

Kingdey and Thomas Hughes, 1936. Hughes, William Morris (b. (b. Australian statesman; b. in gomery hire, Wales Educated: Mont-Llandudno (franmar School; St. Stephen's church school, Westminster, Emigrated to Australia, 1984. Worked as farm hand, to Australia, 1884. Worked as farm hand, coasting sailor, labour organiser. Member of Parliament since its estab. in 1901. Called to N.S.W. Bar, 1903. Minister for external affairs, 1904. Attorney-general, 1908 09, again, 1910-13; and again 1914. Fisher resigned premiership in 1915, and H. took his place. He visited England, then in the turnoil of war, in 1916, was made P.C., and preached an importalism little to the tasts of the Ritt. imperalism little to the taste of the But. Labour Party. He had become essen-tially a war-premier, failed to carry conscription, fell out of favour on the coming of poace, had to resign in 1923, and in 1929 legan forning a ne group called the Australian party. In that year he pub, an evangel of empire called The Splendid Adventure. Joined the Commonwealth (1908, as vice president of the executive council, 1931-3); and again in 1937-33. Minister of health and repatriation (Lyons Gov.), 1934-3; 1936-37; of external atlairs, 1939-40; attorney-general and minister for industry, 1940-41; minister for the Navy, 1941-44. Hughesovka, 8(SALINO, Hugh of Lincoln, St. (1) (c, 1135-1200). of peace, had to resign in 1923, and in 1929

Hugh of Lincoln, St. (1) (c. 1135-1200), bishop of Lincoln, b. at Avalon, Burgundy, of noble parentage, entered the Grando Chartreuse about 1160, and became bursar there. Rose to the office of procurator which brought him into touch with the outer world; and about 1175 he was invited to England by Henry II., to estable the world; and about 1186 he became thusian monastery. In 1186 he became at Witham, Somersot, the first Eng. Carthusian monastery. In 1186 he became bishop of Lincoln; in 1189 went on an embassy to France; in 1194 excommunicated King John, and in 1198 led the first rofusal of a money grant. He was canonised in 1220. The chief hit of St. H. is the Magna I da S. Hugons (in MSS. in the Boddhian Library) written by in the Bodlelan Library, written by Adam, private chaplain to St. II. Sce also Canon Perry's Life of St. Hugh of Avalon, 1879; and life by Marson, 1901. (2) (c. 1246-55), Eug. Christian child who is traditionally alleged to have been at the age of eleven crucified by a Jew of Lincoln, named Copin, after having been tortured and starved on account of his faith. body was buried near that of Grosseteste in Lincoln Cathedral. The story of his martyrdom was a favourite one with Eng ballad-makers and chroniclers. It is the theme of the 'Prioress's Tale 'in ('haucer's Canterbury Tales, and is also referred to by Marlowe.

Hugh Town, tn. and cap, of the Scilly Is., Cornwall, on St. Mary's Is. Hughl, Hooghly, or Hooghy: (1) most westerly and most important of the mouths of the Ganges, India, formed by the con-fluence of the Bhagirathi, the Jalang, and the Churné streams. Its length is about 200 m., and it is about 10 m. wide at the mouth. It is the only mouth of the canges navigable by large vessels, which can safely go up to Calcutta. Navigation r, however, much hindered by silting and the formation of sandbanks. The 'bore' the formation of sandbanks. In the both and the same and the both. The both is often of great height and velocity. The H is held sacred by the Hindows. (2) Cap of dist. of same name, W. Bongal, India, on R. H., 23 m. N. of Calcutta. The thief building is the Inambarra, a Muslim institution. The tn. was founded about

Institution. The fn. was founded about 1337 by the Portuguese, who were driven out a century later by the Mohammedans Pop., with Chinsurah, 50,000.

Hugo, Victor Marie (1802-85), I'r. poet, diamatist, and novelist, b. at Besingon, the son of Gen. H., an officer in Napoleon's army. His childhood was full of change, as the family usually followed their father and the army, and he was diu at the Feuillantines in Paris (1809-11, and 1813-10), at Madrid (1812), and at the Ecole Polytechnique. His poetical genius asserted itself very early in 1816 he produced a tragedy: the next In 1816 he produced a tragedy; the next year was nearly successful in an Academic competition; in 1819 began to contribute to the newly founded Conservature Litterare; and was soy, times the victor at the floral games of Toulouse. In 1822 he made his real literary debut with Odes et poesus diverses. This vol. contains no et possus diverses. This vol. contains no great innovations, but is remarkable for strength and beauty of diction and great dexterity in the handling of difficult rhithms. In 1823 he pub. anonymously the contains Han d'Islande, a fantastio and extravation d'Islande, a fantastic and extrava-gant proso romance, dealing forcibly, but with an utter disregard of possibilities, with a N. bandit. It was followed by Bug Jargal, a similar production (1826). His second vol. of poems, this et ballades (1926), and his third, Orientales (1829), demutely mark the trend of his tastes and opinions. They are 'romandie' in the extreme, the subjects being barbary and fantastic, the metre varied and and fantastic, the metre varied and irrigular, and the language glowing and exote, but the matter is still rather empts and purille. His first attempt at drama appeared in 1825. Commell, which was never acted, is hore a romance in diamatic form than a true drams, but is of some importance in literary hist. It was preceded by a somewhat paradoxical and incoherent preface, which served as a manifest of the new romantic school, asserting the draumtist's independence asserting the dramatist's independence and emancipation from all the old conventions. Its pub. made H. the recognised head of the new movement, a position in which he took himself and his mission very seriously. In 1830 Herman, the first of his typical dramas, was acted at the Théâtre Français. Its subject is the suicide of a noble Spaniard at the moment of his marriage, on account of a point of honour. Its style is in direct

antithesis to all the traditions of the Fr. antibesis to all the traditions of the Fr. stage. The language, though gorgeous, has none of the old classical periphrasis, the Meandrine metre is completely changed in character by constant over lapping, and the old dramatic laws are set at nought—the play was the text of long and violent contention between the Classicists and the Romanticists, and this circumstance has given it a fections circumstance has given it a fictitions importance, since in spite of the splendid march of the verse and the gorgeous diction, Hernam is lacking in some of the principles of dramatic art.



VICTOR BLGO

In 1831 a correspondingly revolutionary production in the realm of prose tomance appeared in Votre Dame de Paris, a pre tentious but picturesque novel of medieval Paris, which shows the influence of Sir Pails, which shows the innuence of Sir Walter Soott. Its failings are a lack of proportion and humour, and an incompleteness of construction, but to the average reader these are it may rate at dirst, completely outweighed by If 's wonderful faculty of describtion, command of passion, and splended and poetical language. In the same very Humour of lyric and contamn lative verse, which contains and contemplative verse, which contains some very fine poetry

The next few years were or ipled in the production of dramas on the lines of Heriam Marim Determe, which appeared in 1311, is usually considered his best. The next year saw to Rois amuse, interducted after the first night, which has

contains however, some wonderful witting. All these dramas show command of linguage and fortility of invention, but are lacking in constructive irt, which probably accounts for the waning of their popularity Their production was intersperse I with that of sev vols of chaining sperse with that of sev vols of chatming verse viz Chants du orepuscule (1857), les Folz interieures (1857), en l Les Ruyons et les ombres (1840), and he also issued during this decade Claude thieux (1831), Lutterature et philos phie melles (1834) a collection of juvenilia and La Lameralda (1856), an opera for Mile Harrin Bertin

H a politic il opiniona had in the meantime been undergoing considerable B Previous to 1830 he had been changes an ardent lesitimist, but during the reign of Louis Philippe he became a constitu-tional royal st sitting in the Assemblée tional royal st sitting in the Assemblée Constituante as a representative of l'aris, later an extreme Liberal, and fin ills, on his election to the Assemblée Législative in 1845 a democratic republican After the coup detail of 1852 he was bamished for opposition to Louis Napoleon, and fied to Brussels and then to Jersey During this time his literary output, was mainly to Brussels and then to Jersey During this time his literary output was mainly confined to journalism and pamphicteoring, but he soon resumed more scrious work in cule The first work to appear was Vapulom le Petit, the least literary of all his works In 1555 he issued Les Châtimunts giving vent to his anger against the second Empire The book is notable as a rare example of lyric sature, ie a combination of true poetry with invective After three years of silence, he emerged in an entirely different light with Les Contemplations (1956), a collection of lyrics remarkable for beauticoncron of vries remarkable for beautiful expression, simple diction, and breadth and profundity of thought In 1959 appeared the Légende des Siècles, a collection of narrative and pictorial poems dealing with different periods of the world's light that the support of the state of the second section. hist, which, though somewhat unequal, contains some of his masterpieces Among the best of the poems are Arg-merillot Le Petit Ron de Galice, and Lyradmus

In 1862 H usaued Les Musérables, a long and unequal prose romance dealing with modern life Its descriptive portions are remarkable and much of the writing is remarkable and much of the writing is touching and sincere but the style is full of maintenant, and the plot abounds in absurdates. William Shalespeare (1864), was a strange and rhapsodical vol of criticism, containing some tine passages of ornate prose. In 1865 there appeared Chansons des rues et des hous, a collection of light lyric verse, notable for its style. It shows it in rather a new light, and the grace delimings, and with of some of those areas of allumings, and with footnoted the style of the sty grace, daintines, and wit of some of those grace, dainting, and with or some or those poems, though not always free from laboured mannerism, show the extraordinary aduptability of his gonius. Les Iravailleurs de la mer (1867), another prose romance, is a tale of passionate adventure and self sucrifice, and contains interdicted after the first night, which has gained a worli wide reputation as Rigo-leito They were followed by Lucrice Borgia (1833), a melo irama, Marie Tudor (1833), andelo 1835), a prose melo-drama, Ruy Blas (1838), which stands second among his plays; and Les Burgrases (1843), a kind of sentimental epic clumsily put into dramatic form, which Though full of power, it is rather extrava

gant, and the general effect is over-whelming and almost weerisome.

After the revolution of 1870, H. re-turned to France and again entered politics, though not with very happy results. He was elected to the National results. He was crected to the reaction.
Assembly at Bordeaux as representative for the Scine, but soon resigned. He remained through the rule of the Commune and defended the Vendôme Column as long as possible and then retired to Brussels. He was expelled from Belgium on account of an imprudent speech in on account of an imprinent speech in favour of the Communists, and returned to France, where he unsuccessfully stood for Paris. He lived in France till his death, in considerable literary and general popularity.

The writings of this last part of his life are of comparatively little importance.

They include: 1/4 net terrible (1872)

are or comparatively in the importance. They include: L'Année terrible (1872), almost his weakest hook, a series of eloquent pictures of the war, full of praises of France and invective against Italy; Quatre-Vingi-Treize (1874), another historial reconstruction of wareaches. forical romanco; a collection of speeches and addresses in 1875-76; Seconde Legende des siècles (1876), which, though not equal to its prodecessor, is still full of vigour; Historic d'un crime (1877), des-cribed as 'the apotheosis of the Special Correspondent': L'Art d'être grand-pere (1877), containing muc'i, 'bat is charming, but a good deal of 'sentimentalism': Le Pape (1878): La Pitié Suprême (1879), L'Ane (1880), Les Quaire Vents de l'Esprit L'Ane (1880), Les Quatre Vents de l'Esprit (1881), a remarkable hast flash of genius; and Torquemada (1882). He died on May 22, and his funeral was marked by a great display of public feeling.

H.'s position in Fr. literature is important in that he not only bestowed on Fr. romanticism a peculiarly 'decorative' character, but actually kept the romantic

spirit alive in France for some thirty years after its apparent decease. As a writer his powers were wonderful. To name only a few of his characteristics, he is only a few of his characteristics, he is notable for vitality, wide scope of genius, graceful lyrical power, rhetorical magnificence, the ability to express pathos, awe, and indignation: wealth of colour and light; variety of style, and consummate skill in the handling of metre and language. His main defects are a lack of humour and proportion, and an allof humour and proportion, and an all-pervading egoism, but despite these he stands on a level with the great names of international literature. See E. Biré, Victor Hugo, 1880, and other vols. by the same author; E. Dupny, Victor Hugo, Phomme el le poète, 1887, and La Jeunesse de Victor Hugo, 1902; F. Gregh, Etude sur Victor Hugo, 1915; Mme. Duclaux, Victor Hugo, 1921; E. M. Grant, Victor Hugo, 1921; E. M. Grant, Victor Hugo during the Second Republic, 1935; P. Zumthor, Victor Hugo, poète de sulan, 1946. 1946.

king of Navarre and the duke of Conde, and opposed to the Catholic party, headed by the Gulses. The strife between them by the Guises. The strife between them developed into the long series of religious wars which began in 1562. Civil rights were granted to the H. by Henry IV. in the Edict of Nantes (1598), but this was revoked by Louis XIV. in 1685, and many Protectors were distant.

revoked by Louis XIV. In 1685, and many Protestants were driven out of France. Perfort civil equality was secured to all denominations by the revolution of 1789 See also France.—History.

Consult J. Illiaire, L'heureuse Conversion des Huguenols, 1610; L. Richeome, L'idolatrie Huguenole, Arras, 1608; F. Puaux, Historie de la Réformation française, 1858; O. Browning, History of the Huguenols and the Revocation of the Edict of Nantes, 1895; F. Puaux, Historie pupulaire des Camisards, 1878; L. Seymour-Houghlon, Handhook of French and Belgian Protestantism, 1919; J. Viônot, Historie de la Réforme française, 1926–34; C. J. Burckhardt, Richelteu, 1935; R. Stephan, L'Epopée huguénote, 1946.

Huichaufu, tin. in the Anhwel prov. of China, 100 m. S.W. of Hangchau. It is famous for its teas.

famons for its tens.

Hulla, dept. of Colombia, S. America, which lies in the S. between the central and E. Cordilleras and is watered by the Magdalena R. It has an area of 7990 sq. m. Coffee is grown by smallholders, but on a much smaller scale than in a number of other depts. The cap. is Neiva (pop. 15,000) on the upper Magdalena R. Gold has bee been found near Neiva. Pop

Huila, volcano in the Andes, Colombia, 60 m. N.E. of Popayan. It is 18,500 ft

Huilla, fort. tn. in the prov. of Angola, Portuguese W. Africa, 90 m. N.R. of Mossamedes. It is healthly situated and

Mossimedes. It is healthily situated and is the centre of a fertile agric, dist.
Huitzilopochtil, name of the Mexican war-god whose feasts were formerly colebrated in May, July, and Dec., amid scenes of revolting savagery. Many thousands of human victims were sacrificed yearly in his honour. The idol is generally carved in wood and of huge proportions: the face is covered with a golden mask, and on the head is a plumed helmet, the shape of a bird's beak.
Hukwang, formerly a proy, of Central

Hukwang, formerly a prov. of Central China, is now divided into the two provs. of Hupeh and Hunan.

Huleh, Baheiret el-, sce MEROM.
Hull, Cordell (b. 1871), Amer statesman
and lawyer, b. in Overton Co. (now
Pickett), Tennessee, U.S.A. Studied at
National Normal Univ., Lebanon, Ohio.
Became a lawyer and judge. Sorved as
a captain in the Cuban War of 1898
Namber of Tennessee House of Repres Member of Tennesses House of Repre-cutatives (1893-97), then a judge in Tennessee (1903-07). Was Demograf Re-Huguenots, name applied to the Fr.

Protestants of the sixteenth and soventeenth centuries. The party grew up
during the reigns of Francis I. and
Henry II., and under Francis II. developded into a religious-political organisation, incree in the Party. Was the loading
into a religious-political organisation, incree in the Party. Was the loading
into in the Party.

Like Roosevelt he showed, World hist. World hist. Like Roosevelt he snowed, as early as 1933, that he belonged emphatically to the internationalist, as opposed to the isolationist, school of thought. Won a signal victory for liberalism with his reciprocal trade agreement law, and the beautiff belong the history was a proper to the control of much credit belongs to him for many trade treaties which achieved an unexpected success, though a fanatical adherence to the obsolete doctrine of smooth favoured-nation treatment has virtually limited these trade agreements to commedities of which the other party is the sole or main supplier (E. H. Carr). An unremitting advocate of tariff reduction the world over and the unflagging opponent of mercantilist policies or of any-thing that operated against conomic over all opposition in Congress and put all scoffers to rout. When H. entered the state Dept. in 1933 his one aim was to secure the reduction of tariff barriers, and though when he left that dept. in 1911, the thought in terms of free trade and the rule of international law. With Roosevelt he was in Advance of Amer. opinion, in 1937, on the Sino-Jap, war, and would have taken positive steps to hamper Japan's aggression. In 1938 he unofficially declared 's moral ambargo' upon the shipment of airphases to all countries which engaged in the a rial bombardment of civilians. Though the pendulum, at arst, swung but lowly from isolationism to internationalism, it is due to H. (next to Roosevelt) that the Amer. people were awakened to their dancer, and as a foreign minister he stands in the line of Adams. Wensicr and Hav. If persistently avoided commitments even in war time, except for the commitment to the vague phrases of the United Nations. When 'normal' conditions returned no counted on an improved Wilsonian system—where Roosevelt relied on his personal contacts with the rulers of the Great Powers neither R. nor Roosovelt seems to have envisaged the policy bading to permanent nulitary commitments and continuing economic action. See The Memors of Cordell Hull, 1943.

Hull, or Kingston-upon-Hull, parl, and so, bor, and riv, port of the E. Riding of York-hire, England, at the junction of the R. Hull with the R. Humber, 22 m. from the N. See, 38 m. S.E. of York and 181 m. N. of London. For more than 700 years the port has been in existence, H. having been famous since the days of modieval ships. Situated as it is on the N. bank of the Humber, which is the N. bank of the Humber, which is the accommodation and equipment for the rapid and conomical handling of goods. consigned to or from all parts of the world. Pop. 1938 (est.) 318,700. 1948 (est.) 293,000.

Port, docks and trade.—The port accommodation comprises ten docks, with a water area of 200 ac. and 13 m. of quays and has a frontage to the Humber hold requisites, blue, starch, chocolates, of over 7 m. The King George Dock surgical dressings, machine beiting, elec-

covering 53 ac. (entrance 750 ft. long and 85 ft. wide) is the largest and best equipped dock on the N.K. coast, and when a further extension is completed it will contain an area of 85 ac. It has a large grain silo at the W. end, 2 graving docks, electric cranes, and an 80-ton floating crane. Alexandra Dock (53 ac.), with a depth of 32 ft., can accommodate large occangoing steamers. It is used to a large extent by the grain trade and for the export of heavy machinery, chemicals, iron, and steel. The Victoria Dock (25 ac.) is the chief centre of the timber covering 53 ac. (entrance 750 ft. long and (25 ac.) is the chief centre of the timber import trade. The Tn. Docks (Humber, (25 ac.) is the continuous fine trade. The Tn. Docks (Humber, Railway, and Princes) (total area 18 ac.) are used chiefly by vessels in the continental and coastwise trades. St. Andrew's and Extension Docks (194 ac.) are the coast for the fishing trade. The Salt End Oil lettles are an ocean depot for discharging and loading mineral oils. The Railway Executive owns five public dry docks and seven other dry docks are operated by sev. companies, mostly marme engineers. The R. H., which rises in the Yorkshire Wolds and flows into the Humber, is a valuable asset to the city and port, for it provides a ready means of warehouse accommodation and is of great economic value to manufac-turing omerns. Stemers up to 200 ft. In length use the Old Harbour, which is the in length use the Old Harbour, which is the term given to the lower part of the R. II. Coll is conveyed from Yorkshire and the Midlands by riv. craft to the mills and gasworks on the R. II. No Brit, nort stands so well naturally or economically as If for riv. or canal barge traffic, Inland water maygation and transport ink II. with Leads, Sheffield, and numerous other this, of Yorkshire and the Midlands. Altogether II. is the base of 600 m. of inland water navigation.

The culef trades using the port, are:

The colef trades using the port are; gram, truber, wool, full, dairy preduce imported ment, coal exporting, and cold storage. There is storage accommedation for over 750,000 quarters of grain (in 1938 grain imports into II. were 1,166,855 tons). II. is the second largest soft-wood importing centre of the United Kungdom, and in 1939 timber imports exceeded a million loads. Wood imports in 1933 amounted to nearly \$1,000 tons. The II. tishing industry, which is the largest single business existent in II. is now donn fled at St. Andrew's and St. Andrew's Extension Docks at the W. and of the city and represents a self-contained community with ne factories, fish meal and oil works, ship-repair and engineering shops, all owned and conducted by the fishing trade. The Fish Mikt, which was reconstructed in 1933, embracing mer-chants office, post office, banks etc., is already made mate to meet expanding need4

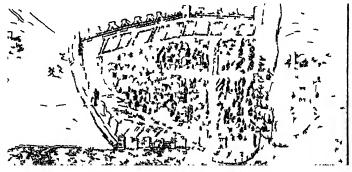
Industries. II. has large ship-repairing nuturies. II. has large sop-repairing and marine cucineering estable, manufs, of oil, paint, colours, machinery, ropes, chemicals, tanning, milling industries, sawmilling, industries dechol, margaring, cement, central heating apparatus, housetric lamps, fish oils, fish meal and cured fish. H is the chief centre of the seed crushing and oil extraction trade in the kingdom A branch of this industry is the manuf of feeding cake and meal for It is one of the largest and oldest centics in the world for the manuf of all centres in the word in the institution of paints, charmels, colours, polishes, stains, distempers, and varnishes. The laundry blue and starch industry commenced in H in 1811, and the making of ultramatine, which is the basis for the blue now used in household washing, was but now used in nouscinois washing, was begin in 1883. The stairth made here is a rice product and is sold in packets. Figureering has been one of it s staple industries. See im was in its infancy when the industry began in H in a small part of the content of the content. In 1902 the first force concrete bridge to be built in Linglind was con structed in H. Allied to the ship building industry is that of marine engine construction and ship repur work, and to dry about 8000 men ind employment in those and the general engineering industries industrial alcohol is pro duced on a large scale, and among other chemicals produced are acetic acid acctone, but all alcohol and many allied chemicals of the first importance to such industrice as artificial silk, cellulose lacquers, pharmaceutical chemicals, and textilen

Hullings—The prin churches of H are the great church of Holy Trinks beside the mist place, which dates back to the thirteenth century. Its tower is 1:0 ft high and the church is 272 ft long. The chancel, in the Early Eng style, 19 said to be one of the oldest buildings of said to be one of the eldest unidings of bick in the kingdom still in use for the original purpose. The rest of the fabric is of stone and mainly of Late Perpen dicular date. Holy Trinity is the only building left which shows the importance which Edward I attached to his new foundation and the church was designed from the first to serve a great city st Mary's Chuich, I owgate, originally built by the Knights Hospitallers of V Ferriby, dates from the early fourteenth century. It is said that Henry VIII caused a large part of the church to be removed for the enlargement of his manor house St Poter's Church, Drypool, near Victoria Dock, though not within the in at the Dock, though not within the in at the date of its building is reputed to have been built originally in the reign of Edward I The present building, constructed about 130 vern ago, is the third on the site, and this stands in ruins as a result of enemy action during the Second World War Among the other notable buildings of H are the city hall and dock offices, the central library in Albion Street, the Forens art gallery in Queen Victoria Square the Guildhall and Law Courts, the central police station, and the Wilberforce monument Wilberforce House, High Street, a fine Elizabethan manor and by of Wm. Wilberforce, the philanthropist, now serves as the city's historical museum and memorial to Wilberforce. Among educational institutions of the Manthes offices, the forens art gallery in Albion of the Street, the Forens art gallery in Qucen Victoria Square the Guildhall and Law Courts, the central police station, and the Wilberforee monument Wilberforce House, High Street, a fine Elizabethan manor and bp of Wm. Wilberforce, the philanthropist, now serves as the city's historical museum and memorial to Wil historical museum and memorial to Wil berforce. Among educational institutions the Nautical School and School for Fishermen, the Trinity House Navigation is a leading port, its trade depending on

School and the Marine Fugineering and School and the Marine Engineering and Wircless Telegraphy and Telephony Depts of the Felmical College serve the special needs of H's maritime pop. The Technical College, the College of Arts and Crifts and the College of Commerce are large and well equipped colleges. The Univ. College, opened in 1928, provides courses in preparation for the external degrees of the univ. of London in Arts, School Low Fernance, and Compares degrees of the univ of London in Arcs, Stance, Law, Economics, and Commerce History—II clearly these its name from the R II, on whose r b a trading place was estab at least as early as the twiffth century. The bist of 'H.,' however begins with the tuship of Wyke, the port being referred to in anct doen ments as 'Hulmo' or 'Le Hul,' whose trade recerds go back to as early as the year 1193 The forerunner of the original bor of H was the manor of Myton, to g the with the afor and hand tof Wyke, both of which were put of the eccles pars of the sle and N Lerib Hest Thes, except to the portion in the par of N ex cpt to the porten in the par of N (111b), were acquired by degrees from 1100 to 1180 by the Cistercian monks of Means Abbey in Holderness, who cultivated the lands and built themselves a grange in Myton on the site now eccepted by the Railway Dock their settloment being known as Wyke In 1270 the monks wer grunted the right to hold a mixt and a fur in Wyke, the fair later becoming it I in, one of the best known of the old Fing trade fairs. Wyke was acquired by king I dward I in 1293 and its uame was changed to Kingston upon H. It was granted its first Charter (1299), making the trade face bor From its earliest days Wyke was a port with a flourishing export Wike was a port with a flourishing export trid in wool and in imports of continental wines and merchandise Later, it- strategic importance is the key to the its stritight importance is the key to the Mullands, was recognised. New quays were built, the internal communications where built, the internal communications shore of the Humber was estab, and in 1372 the transported and fortified. The progress of the transition and its tade evidently justified the confidence of I lward I. During the reign of Edward III. William de la Pole the first mayor of H. was the most influential king's fire and largely financed. of it was the most indication languaged the carlier campaigns of the Handred Years' war. The collegate church of Wingfuld with its De la Pole chantry church, remains a permanent memorial of the Del Role with the manufacture. though the Carthusian Priory in H was their prin, burial place Flirabeth Plan tagenet, sister of Fdward IV, was the last of the family to hold the manor and the file.

timber tallow, furs, and other goods from the Baltic In the wars of the Roses Edward IV landed on the Holderness coast and Richard Anson mayor of H
d fighting for the house of \ ork Henry
VIII took a keen personal interest in H
and new fortifications to protect the
harbour were largely devised by the king
himself whose instructions in his own It was from handwriting are still extant nandwriting are still religious fathers set sail for Leydon in 1620 whence they re-embarked for Plymouth to Join the Majflower (there was a Mayflower in klizabeth's reign trading from II, when she was built, but whether this was the

the export of woollen cloth and lead and | King George V (1914) In all, thirty the importation of spices, pitch, flax, iron, timber tallow, furs, and other goods from the Baltie In the wars of the Roses and of the thirty two are still preserved Edward IV landed on the Holderness in the Guildhall The Chartor of 1661 be came the governing charter of the tu under came the governing charter of the tunnder which the corporation acted until the passing of the Municipal Corporations Act 18.7 The tunnes created a city by the Charter of Queen Victoria July 6, 18.97 and the cilic of mayor was raised to the dignity of Lord M 13 or by the Charter of King George V, June 26, 1914. In the linst World War over 7000 men belonging to H laid down their lives the city also suffered both in lite and property by frequent attacks at night by enemy airships. A memorial in Oppy vil enemy airships A memorial in Oppy vil



A COLL OF AN ANCIENT FLAN OF HULL From a drawing in the Cotton MSS

same ship is unknown) In the Civil war the first forcible resistance to Charles I was the closing of the gates of H against him in 1642, the king proclaiming the governor, Hotham, a traitor Hotham later platted to bettav the garri on to Charles but the plot was discovered and Hothern secretly fled only to be captured and executed on lower Hill The to also sustained two sieges. Andrew Mai well represented H in the last Parliament of the Commonwealth and after the

Restoration

Win Wilberforce (q v) was a citizen of
H and its member of Parlament for a time during his long tight for the abolition of slavery in the Brit Empire 1 he con struction of docks was a dev by ment of this era, the Queen's Dock (known as the Old Dock) being excavated between 1774 and 177" (filled in, in 1930 and lord out is gardens and now known as Queen's Gardens) Before 1830 two other docks commemorates the part played by the sons of H in the buttle of Oppy Wood on May 3 1916

The city of H was one of the three most bomb damaged areas in the country in the See and World War The concentrated furs of the Luftwaffe left its traces in no uncertain manner in the central area of the city though in no way was the damage so con entrated as it was in the other two areas—1 endon and Plymouth Out of the)...(60 dwelling houses 305 were complictly destroyed or so badly damaged that d milition was necessary, while there was a total of 111 718 reported damaged during the war period all of which have been repaired. Of the shops nearly half were destroyed. The prin industries also suffered a version time of the three larges. suffered severely, two of the three large flow mills and sev oil and seed crushing mills and oil refineries were almost com-pictely demolished. It is estimated that extensive reconstruction will be required ware made completing a ring of water throughout this industry to re establish around the old in —the Humber Dock it I his may also be said of most of the was opened in 1800 and the Prin cs Dock in 1829. He slayest dock, the King 1914 Plan for H prepared by Sir Patrick George, was opened by King George V in 1914 Plan for H prepared by Sir Patrick George, was opened by King George V in Abertromble and the late Sir Edwin 1914. The (ity has a very fine collection Lutyons contemplates the policy of radical of Royal Charters and Letters Patent rebuilding of central areas, requiring a dating from King Edward I (1299) to big reduction of pop at the centre and ancquare local upon space and area for community purposes. The shopping centre is planned as a highly specialised prefine, free from through traffic but adjacent to the central traffic routes something completely new in shopping contres is proposed, which should restore to H its pre war position serving a sur rounding area comprising a pop of 750 000 people Industrial expansion is provided for up the R H and along the Humber Other proposals relate to level crossings and the road system, education buildings, agric reservation and geen belt Many of the proposits were under contemplation before the war they tre now regarded in the plan as imper tive and in many cases have been rendered comparatively easy of realisation through

the destruction cause I by the war Hull, city on the N shote of the Ottawa R in the co of H in the prov of Quobec (anda The varied industries are engaged in the manuf of pulp paper cement, mica clothing, dressed lumber, concrete blocks, matches, lewellers et Within the city and its surroundings there are four large electric generating stations of which the largest has a capacity of 200 000 hp. H is the shopping centre

250 000 h p H is the shopping centre for a very prosperous farming country. Ultimate transportation is by a modern autobus system. Pop. 10 000.

Hull, Edward (182 13 ... Vrish geologist b in Antrim. In 1869 he was appointed director of the Geological Survey of Ireland and prof. of geology in the Royal College of Science, Dublin. in 1873 president of the Royal Geological Society of Ireland. He conducted a geological expedition under the auspices of the Palestine Ital Ioration Fund in S. Palestine and Arabia Petrus in 1853 84.

of the Palestine Paj ionation Fund in S Palestine and Arabia Petrua in 1853 84 and another in the Nilo Villey in 1893 Hullah, John Pyke (1812-54), Eng musical reformer b at Worcester He entered the Royal Academy of Music in 1832 and attained fame as the composer of the music to Dickens a opera. The Fillage Other of tras were The Outpost and The Harbers of Imssor: In 1811 he started popular class s for the vocal training of schoolmasters in 1 xeter Hall He was appointed prof of singing at King's College and afterwards inspector of training schools for the United King dom In 1861 duburgh Univ conferred on him the degree of LL D. He always opposed the tonic sol fa system He is the author of a History of Masic (1843). His most popular songs are Three Kishers The Storm. and and The Barbers of Bussors In 1811 he Music (1813) His most popular songs are Three histers The Storm, and () I had ue two uere Manna Huls, to of the Rhine hand, Germany, 17 m NW of Disseldorf manufs silk, velvet, and line n Pop 7000

adequate local open space and area for college, to found a prize for a dissertation, community purposes. The shopping and to found the offices of Christian advocate and Christian preacher or Hulsean lecturer. In 1860 the former office was changed by statute into the Hussen pro-few-orship of divinity The original terms of the ketureship provided for twenty ketures or serinons in St Mary's great church (initially but these were reduced to right in 1830, and later they were further a inced to four. The value of the Hule endowment is between £900 and 1800 and the transfer the series the and 4900 a year on tenth goes to the lectureship a done tenth to the Hulsean The and the nest to the prof of divinity
The first to hold the office was the Rev Chirtopher Ben on who lectured in 1820, in I the following well known names may le found among the leturers R O
Truch 184. (hristopher Wordsworth,
184. Imas Moorhouse, 1865. F W
Farrar 1870 k J A Hort, 1871 W
Boyd (arrenter, 1878, and M Creighton,

Hulton, Little, par and tn of S Lancashra ingland situated 4 m S L of Bolton There are extensive coal mines near Pop (1931) 7800

Humbao, in on the E coast of the is of I u ito l.ko, W Indice, 30 m & L of San Inan Pop 16 000
Humane Society, The Hoyal This

Humane Society, The Hoyal This society was founded in kingland in 1774 by 1)r Vm Hawes (1746-1808) and Dr Thomas Cogan (1736-1818), the object being to save life from drowning and to re-tore by artificial means those who appear to be drowned. The two doctors, having made many experiments, collected a number of their friends at the Chapter Coffe house in St. Paul's Churchyard old there the society was founded. The Reaching House, Hyde Park, was their first depot (there are now some 300), and tluc boats and boatmen with life saving apparatus are kept, and icomen supplied during the skating season. Money re-wards in edals clasps and testimonials are bestowed on those who save or attempt are distinct on those who save is accomp-to save people from drowning and the banty has extended its scope to include fall cases of exceptional bravery in rescu ing or attempting to rescue persons from ing (r attempting to itself persons from my 1 y is a in mines, wells, blasting furnaces, or in sewers where foul gas may endanger life? In 1973 the Stanhope goll medal was instituted and is given to the 'case exhibiting the greatest gill intry during the year', prizes are also given for swimming to public schools and training about the greatest greates and training ships The society is carried on by means of subscriptions and be quests, the head offices are at 1 Trafalgar 5 junes, London

Humanism, see PRIGMATISM

Humanitarians, originally a name given to a certain school of theologians in the velvet, and linen 1 op 7000

Huisean Lectures, founded by John Huise (1708-90), an kng divine Huise graduated at St John's College, Cambridge, in 1724, and took orders, but in 1713 he came into his father's property in Cheshire, to which he retired, and on his death he left the property to Cambridge Univ to maintain two divinity scholars at £30 a year each at his old

whose main object is to lessen as far as possible the physical pain and discomfort in the world of to-day, and who hold strong views with regard to modern war-

fare, corporal punishment, etc. In this modern sense, the Humanitarian League, founded by H. S. Salt, aimed at

League, founded by H. S. Salt, almed at consolidating philanthropic and zoophilist sentiments and ideas into a 'humanitarian system of othics.' See H. S. Salt (d. 1937) Seventy years among sevages, 1921; The Logic of Vepetarianism, 1933; H. Moore, The Universal Declaration of. This, the first international Bill of Rights in human hist., drawn up after two-and-a-half years detailed study, was adopted by the plenary session of the Goneral Assembly of the United Nations on Dec. 10 by forty-eight votes to nil, with eight abstentions (The Soviet Union, Poland, Czechoslovakia, Yugoslavia, the with eight abstentions (The Soviet Union, Poland, Czechoslovakia, Yugoslavia, the Ukraine, Byelorussia, S. Africa, and Saudi Arabia). The Social and Humanitarian Committee approved the final druft on Dec. 7 by twenty-nine votes against the six of the Slav bloc with Canada abstaining on the grounds that social legislation in Canada was for the prov. govs. and not for the Federal Gov. Canada, boursyes voted in favour of the Indulgrahowever, voted in favour of the Declara-tion in the plenary season. The Pre-amble relates the declaration by implication, to the disregard and contempt for human rights manifested in the Second World War by barbarous acts which 'outraged the conscience of monkind' and assumes that, 'if man is not to be compelled to have recourse to rebellion against tyranny and oppression, human rights should be protected by the rule of rights should be protected by the rule or law; and it goes on to relate the declaration also to the realilmention by the peoples of the United Nations in their Charter (q.v.) of their 'faith in fundamental human rights, and in the equal rights of men and women,' and to their determination 'to promote social progress and butter etendards of the interpret and better standards of life in larger freedom.' The Preamble is followed by freedom. thereford. The Freamole is inflowed by thirty-one Articles setting out the rights in detail. These rights are those which are commonly associated with the way of life of a modern W. democracy and to be found embodied to a greater or lesser extent in the provisions of a free democratic acceptance of the decisions of a free democratic acceptance of the decisions of the decision of the deci cratic constitution or in the decisions of the courts. They may be said also to be a sequel to the declaration of peace aims in the Atlantic Charter (q.n.), particularly that Article of the Charter which emphasises the right of all men to live out their lives in freedom from four and want. Among the rights enumerated are: that all human brings are born free and equal in dignity and rights—a re-echo of the famous assertion in the Amer. Constitution; the right to life, liberty, and security of the person; equality before the law; freedom from arbitrary arrest, detention or exile; trial by independent and impartial tribunals; the right of everyone charged with a penal offence to be presumed inno-cent until proved guilty—a long-estab. principle of the Eng. common law; free-dom from arbitrary interference with a

person's privacy, family, home, or correspondence—by implication a condemnation of notorious practices of the Gestapo; freedom of movement and residence within the borders of one's State; the right to a nationality (many of the 'dis-placed persons' were 'stateless' as also were and are many women who marry allens) and to change one's nationality: the right to marry and found a family; marriage to be entered into only with the free and full consent of the intending spouses, the right to own property alone or in association with others (a right hardly to be reconciled with a communist economy); the right to freedom of thought, conscience, and religion, and of freedom of opinion and expression; freedom of peaceful assembly and association—also a familiar principle of the Eng. common law: the right to take part in the gov. of one's country, directly of through freely-chosen representatives; universal and equal suffrage by secret you; the right to social security, the right to work. to free choice of employment, to just and to ree choice of eliphoyment, to just and favourable conditions of work, and to protection against uncomployment; to equal pay for equal work, to form and to join trade unions; the right to rest and leisure, and to an adequate standard of living. In the nature of things these rights are guaranteed by no legal sametions; but the Presumble proceedings the tions; but the Preamble proclaims the Declaration to be a common standard of achievement for all nations, to the end that every individual and organ of society shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States (of the United Nations) themselves and among the peoples of ters, under their jurisdiction.' The prin-ciple of collective responsibility for the maintenance of human rights and fundamental liberties was accepted (Aug. 22, 1949) by 11 votes to 5 in the legal Committee of the Consultative Assembly of the Council of Europe, which met at Strasburg.

Humansdorp, div. of Cape Prov., S. Africa, bordering on the Indian Ocean, and bounded on the N. by the Winterhoek Mts. Cap. Humandorp, 50 m. W. of Port Ellzabeth. Pop. (tn.) 1600; (div.) 9000 Humayun (1508-56), Mogul emperor of

Delhi. In 1.30 he succeeded his father, Baber, in India, the kingdom of Kabul and Lahore going to his brother Kamran. For ten years he was engaged in fighting the Afghans under Shor Shah, and was at length defeated and fled to Persia. In 1545 Sher Shah was killed, and H. returned to India with his son Akbar, and again occupied Delhi, but six months later he was killed by a fall from the parapet of hi- palace (1556), and his son, Akbar the Great, succeeded him. It was at his tomb, one of the magnificent Mogul monuments near Delhi, that Hodson captured the last of the Moguls, Bahadur Shah, 1857.

Humber, estuary on the E. coast of England lying between Yorkshire on the

N and Lincolnshire on the S., and formed | of the humble-bees, and some of them N and Lincolushiro on the S., and formed by the Rs. Trent and Onse. These riva. Join near the vil. of Faxfleet, and from there the H runs for 18 m in an easterly direction, and then 19 m. in a S.-easterly direction to the N Sea, widening from a m at the head to 8 m. in the hay formed by a spur on the North-Bird Ceast known as purin Head. The area drained by the H is 2393 so in the interpretation. H 19 0.293 sq in H 11 12 an important com-mercial waterway and has on its banks the ports of Hull and Grinsby.

the ports of Hull and Grinsby.

Humbert I., Rameri Carlo Emanuele Glovann Maria Ferdinando Eugenio (1944-1900) king of Italy (1878-1900), eldest son of Victor kinmanuel I., b at Turin, Surdina Ho succeeded his father as H. L., h comp previously married his cousin, Marchorita Teress (towanna, princess of Savoy and daughter of the disk of Genoa He at once proceeded on tour through his kingdom, and an attempt was made to assassinate him at Naples (Nov. 17-1878) by a fainter named the samanter. Passanante His reign was peaceful, and he secured for It Iv a share in the Priple Alliance, his relations with Great Britain being always most friendly. He was a time soldier and won popularity by he generosity and manner and in-peronal civity anong he perple, who cilled him 'II the Good' A second attempt wish door his in youl 1897 thing wis I de or distributed and a third attempt in ide by another anatchist, numed Bress, moved successful, and he distributed in I fundante, 1901.

resemblance to those of the wasps than is

of each season save ter a few females which survive the vinter, and each or which starts a row society in the sprair The female of B Tipha mus builds its rest m cavities among stones increty butter, the sides will moss, but I terrestris and other specks form a habitation out of carded moss, in de erted mou e nests holes in the soil, etc. The way is secreted holes in the soil, etc in the abdomen of the insect, and is then transferred to the less and moulded into building material After the construction of the first cell, the temale deposits the eggs therein closes up the cavity, and tests ser dive before proceeding to the construction of other cell. The larvie

expand and distend the cell in a curious, irregular manner, and when full grown they pupate in the moss each larva forming a cocoon of finest silk The queen scrapes away the wax from the cocoon,

bear a curious resemblance to their hosts There is not that symmetry of structure in the cell of the H. B. which is so marked in the cell of the honey-bee, and they vary considerably in size. H. Ba. display a great variety of colouring, which runs generally in bars of alternate light and dark B terrestris, B. hortorum, B. laptdarius, etc., vary even in the same species. The genus is widely distributed in the S hemisphere, but is unknown in the Lthiopian and Australian regions See also Bi E.

Humboldt, riv., rises in the N.E. of Nevada, flows W S W through the Hum-

boldt Lake, and is lost in the marshy dist knyvn as the H. and Carson Sink Leigth, 131 m Humboldt, Friedrich Heinrich Alexandei, Baron von (1769-1859), naturalist, b at Beilin. He studied at Frankfort on the Oder and Gottingen, and having mad an excursion up the Rhine during a (cition pub Mineralogueche Leobach (np) uber einige Basalte am Rhein (1790) " n p observing Bassile am Rhein (1790)

11 sitewards went to Freiberg to study
geolecy and produced his Flore I silergenus Specimen (1793). In 1799 he went
tes Ancieus with Amé Borpland, and
tem Affivo year were taken n, with
explesions in Americals, Colombia
lender, Pern, (also, and Maxico, an
leccount of which was puben in his longues
our hydron Equinovales du Anceque
("colombia (1807), which con isted of thirty
tem and anarto yed." In 1807 he paid a f i) and quarto vol In 1507 he paid a i to Italy, but ultimately went to Humble-bee, or Burdle-bee, name given let it where he was occupied from 1825 to all sieer of hombus, a well knewn to 1825 in given gener of It menopiers helonging to the family Anda and subfamily Socialing to the scenal beet the highest bear closer (v) into In 1829, he nade a journey) one of the greatest securities works on the In 1829 has note a journey it i Precand Chrenberg tripugh Central the case with the genus apres. The work A and explored the tradard Altar Mts, ets. do not differ externally from the Locarra, and the Casp in, the results queens, and the colonics parish at the end of this expedit in appearing in briggments. of this expedition appearing in progments hadone et de chinado on assidiques I al., and in Asie Contale an enlarge in it of the earlier work, 1813). See his by H. Brithus, 1872 train, into Fing. 13 the Misses Lassell 1875. A Letter num 1936, and I Bourne, Wesen and It tuben die Geographie bet Alexander con the choid of the

Humboldt, 1951.

Humboldt, Karl Wilhelm, Baron von (1 67-185), philologist elder brother of Abrunder von H., b at Potsdam. He wis educated at beilin, Gottingen, and limit and in 1800 eccame Prussian nuister at Rone. In 1808 he returned to I russia, and the following year was a pointed minister of public instruction, the I crim 1 mix, owner its existence to hare In 1813 he was Prussian plenipoha c to that wat the Cop, uses of Frague, but he rured from political life in 1819 and devoted himself to attracture. He made to assist pupation, and as the broad a special study of the Basquo language becomes matured she gives up to them the labour of collecting pollen and conlines hosself to producing eggs. The temales, and of the S Sea Is, the great work of his hosself to producing eggs. The temales, life being on the ant. Kawi language of which are smaller than the mother, assist her in the process of egg-laving, as also do the workers to a losser extent. The of the Basque Language, the result of his species of Psithyrus also inhabit the nexts

Über den Dualis. His Gesammelte Werke User den Duais. His Gesammette Verke (1841-32), were pub. by his brother, and his correspondence with Schiller, of whom he was a great friend, appeared in 1830, See E. Spranger, Withelm von Humboldi und die Humantitisidee, 1928; and studies

una die Humanikusidee, 1928; and studies by R. Haym, 1856; (). Harnark. 1913; P. Binswanger, 1937; J. A. von Rinntzau, 1939; and E. Howald, 1944. Hume, Allan Octavian (1829 1912), Father of the Indian National Congression of Joseph H., a doctor of the E. India (Company, Ha. 2022) son of Joseph H., a doctor of the E. India Company. He was educated at the E. India Company. He was educated at the E. India College (now Hallevbury College), passing from there to the Indian ('1vil Service (1849). In Simla he formed an organisation which would further the aspirations of advanced Indians; this was the birth of the National Congress (see his Audi Alteram Partem). When H. returned to England in 1894 he took great interest in the Brit. Committee of the Indian Congress. In India H. made a valuable collection of botanical and ornithological specimens, and pub. The Game Birds of India, Burma, and Cepton (1879-81). He presented his collection to the Brit. Museum of Natural Hist. (S. Kensington). He founded the S. London Botanical Museum and made prevision Botanical Museum and made provision for it in perpetuity. See studies by W. Wedderburn. 1913, and H. V. Lovett, in History of the Indian Nationalist Morement. 1920.

Hume, David (1711-76), Scottish philosopher and historian, was intended for the Bar, but abandoned the intention of becoming a lawyer owing to ill-health. He went to France in 1731 to recuperate, and there wrote his Treatise on Human Nature, which was pub. anonymously in 1739, two years after his return. This book which was pub. anonymously in 1739, two years after his return. This book attracted little attention at the time, but a better fate attended hrs Essays Moral and Political (1741-42), and his subsequent works, Philosophical Essays on Human Understanding (1743), the famous Enquiry concerning the Principals of Morals (1751), and his Publical Discourse (1752). He had failed in 1745 to secure the professorship of chiles at Edinburgh Univ., and later his application for the chair of logic at Glasgow Univ. was not successful; but in 1752 he was appointed keeper of the Advocate's Library at Edinburgh and also secretary to the Edinburgh Philosophical Society, which latter post he resigned five years later. He now worked stendilly at his hist., which was pub. two vols at a time, between 1754 and 1761. In 1763 he went to Paris with Lord Hertford, and held an official post at the cubassy, and became a to Paris with Lord Hertford, and held an official post at the embassy, and became a noted and popular figure in the society of the cap. The last years of his life were spent at Edinburgh. His autoliography, My Oun Life, was pub. two years after his death, and his Correspondence (ed. Birkbeck Hill) in 1888. Other posthumous works were Suicide and Immertality (1771) and Distress on Natural Palings.

metaphysicians in this or any other country. His hist, suffers severely from inadequate research, and is best studied in the abbreviated version, ed. by Dr. Wm. Smith, 1870. The force of H.'s philosophy lies in the fact that he carries the empirical and sensationalistic tendoncies of Locke and Borkeloy to their conclusion. The psychology on which his results are founded follows that of his predecessors but is less ambiguous. Every object whatsoover is reduced of ther to an impression or an idea-ideas evidently corresponding cheels to impressions but differing in the degree force or vivacity. For H. impressions and ideas, whether simple or complex, are the sole contents of the human mind, all of them going back originally to impressions Hence, as Berkeley said, there can be no such thing as material substance, and reality is co-extensive with ideas. Berkeley held, however, that we could know spiritual substance as opposed to material; but H. asks what, indeed, is the positive impression on which the idea the positive inpression on which the idea of spirit is founded, and he held that neither had any existence. It said that, if all his perceptions were removed by death and could he neither think, nor feel, nor see, nor love, nor hate after the dissolution of his body, he would be entirely annihilated, nor did he conceive what was further equility to make him a prefect further requisite to make him a perfect nonentity—in short H.'s scepticism can imagine no life after this annihilation of the perceptions (we may not say of the self because H. denies the validity of the notion 'self'). H., hower, holds that there are certain all-pervading relations, outside the relation to a self, which seem to bind our ideas to form what we call knowledge. The most important of these relations is that of cause and effect, but that it is necessary to examine whother such relations correspond to definite impressions. Berkeley thought that he had found a basis for the reality of causation in the free activity of Spirit H. however asks for the corresponding impression and seeks the derivation of the relation of cause-and-offect from some relation among objects themselves as distind from any particular qualities in those objects; and he finds such relation in the two concepts of contiguity and succession. These, however, do not exhaust causation; for an idea may be con-tiguous and prior to another without being regarded as its cause. Something of the first importance remains to be added and that is the idea of necessary connection. that is the idea of necessary connection. To the question, for what reason do we pronounce it necessary that everything whose existence has a beginning should also have a cause. If, denies that the necessity exists and that every demonstration which may be produced for the necessity of a cause is fallacious and sophistical. To the question, why do we conclude that such particular causes must mong works were Suicide and Immeriatury sophistical. To his quantum, way as not (1777), and Dialogues on Natural Belligion conclude that such particular causes must (1779). The value of his philosophical writings has never been questioned, although at one time his scepticism made though at one time his scepticism made we draw from the one question to the him notorious among the orthodox, and the takes his place as one of the leading the belief in the necessity of a cause is not referable to any intuitive truth, it must proceed from observation and experience. And here, he says, we insensibly light upon a new relation between cause and effect, that is, their constant conjunction or, in other words, contiguity and succession are not sufficient to make us pronunce any two objects to be cause and effect, unless we perceive that these two enect, these we preserved in sev. instances, an inquiry which will enable us to discover the essential nature of the idea of necessary connection. H. arrives at the conclusion that the peculiar strength of our belief in casual inference is due to the our benefit in casual interence is and to the fact that, by constant conjunction, the relation of cause and effect has acquired the force of oustom, or habit. What we call power, or force, or casual efficiency, says II., exists not at all in objects, but only in the mind. 'Necessity is something that exists in the mind, not in objects; nor is it possible for us ever to form the most distant deat of it, considered as a quality in boars. This is his chief con-tribution to philosophy; he admits that it is a violent paradox but considered that he had advanced solid proof and reasoning to justify it. From this hypothesis, he goes on to consider the origin of a belief in the external world or to answer the question, How out of a flux of unrelated feelings, never repeated, do no evolve an feelings, flever topicati, c' we evolve an independent world or identical things, and identical selves?' And suggests that we have only succeeded in reasoning ourselves 'into a frame of mind where the solid fabric of the world dissolves like a dream before our eyes, or passes into a kaloidoscopic unreality of change. But, he asks, is then scepticism the final word of philosophy ! Apparently the result of 11.'s inquiry is not intended to destroy belief (assuming that were possible), but to dispose of the falso assumption of its certain and demonstrable character. () course the forthright nature of H.'s concourse the forthight mature of 11.8 conclusions was itself the promise of a new epoch, and the first attack on his scepticism came from the so-called Scottish school of Reid, Dugald Stewart, and Sn' Wm. Hamilton, though the merits of Reid have tended to be obscured in the control of the latest at the second s Win. Hattinton, brough the herris in Reid have tended to be obscured in the greater light of Kant. See lives by T. H. Huxley, 1879; W. Kingth, 1888; T. H. Grose and T. H. Green, 1898; C. J. Franken, 1907; R. Metz, 1929; J. Y. Greig, 1931; also J. McCosh, Scottsh Philosophy, 1875; E. Alboo, Hume's Ethical System, 1897; G. H. Sabine, Hume's Contribution to the Historical Method, 1906; C. D. Brond, Hume's Theory of the Credibility of Minacles, 1916; C. W. Hondel, Studies in the Philosophy of Hume, 1925; A. E. Taylor, Hume and the Miraculous, 1927; A. Leroy, La Critique et la religion ches David Hume, 1930; J. Laird, Hume's Philosophy of Human Nature, 1933; J. F. Doering, Hume and the Theliosophy of Thomas Nature, 1933; J. F. Doering, Hume and the Theory of Tragely, 1937; N. K. Smith, The Philosophy of David Hume, 1941. See The Philosophy of David Hume, 1941. See also ETHICS.

Hume, Grizel, see BAILLIE, LADY CHIZEL.

Hume Reservoir and River, see MURRAY or HUME.

Humerus, in physiology a term denoting the bone of the upper arm; or, in quad-

rupeds, the upper fore-log.

Humidity, of the atmosphere, refers to the amount of moisture that it contains. It is high or low according as the air is damp or dry. The amount of moisture in the air at any given time has a great bearing on weather conditions. The amount of varies in different localities, and is never constant even in any one place; and temp., pressure, wind, and sunshine are all affected according as the II. is high or low. The warmth of the body and breathing even depend upon H. Thus when the air is dry much more water vapour is expelled with each respiration than when the II. is high. Cold and heat are much more easily resisted in places of low II. than in places where the air is damp. (For methods of finding the absolute and retaitive II. see Hygrometress.) When the air is fully saturated with moisture, the relative II. would be 100, and thus is seldom reached in practice except in fore or mists. Sea air naturally has a high II., over 90 per cent, but land air, particularly in dry winter weather, may be as low as 50 per cent., or even, over 40 per cent., 20 per cent., or even, over 40 per cent. Isles varies from 30 to over 80 per cent. Isles varies from 30 to over 80 per cent., Johann Nepomuk (1778-1837),

Hummel, Johann Nepomuk (1778-1837), Austrian pianist and composer, b. at Pressburg. He was a pupil of Mozart and started with him. At the age of ten he started on a concert tour through Europe, and returned to Vienna (1795) to study



J. N. HUMMEL

under Albrechtsberger and Salieri. In 1801 he succeeded Haydn as kapellmeister to l'ence Esterhazy; in 1816 he was appointed musical director at Stuttgart, and in 1820 he illed the same position at Weinar, where he d. He conducted operas in the chief cities of England, Russia, France, and Holland. His chief works are sonatas and études for the piano. See W. Meyer, Johann Nepomuk Hummel als Klavier Komponist (Kiel),

1922; G. Sporck, L'Interprétation des sonates de Johann Nepomuk Hummel, 1933.

sonales de Johann Nepomuk Hummel, 1933.

Humming-bird Moth, see HAWK MOTH. Humming-birds are members of the coraciform family Trochilides, and are so called because of the vibrating sound produced by their wings; there are from 400 to 500 species, all of which are confined to America and the W. Indios. Among them are some of the smallest of iving birds, Mellisuga menuma measuring only 2½ in. in length. They are characterised by a long, awl-shaped bill, and a long cleft tongue in the form of a double tube, which can be protruded to a considerable distance and withdrawn again very rapidly; the stermum is greatly developed, forming a suitable base for the strong wing-muscles, which assist the untiring flight; the plumage is generally exquisition colouring, especially in the males, with a brilliant metallic lustre, the effect of which is heightened by the crest, cartufts, and ruffs. The Trochildse are insectivores, and dart from flower to flower in search of food, pausing over the plant with the body suspend d in a vertical position and the wings whirming plant with the body suspend d in a vertical position and the wings whitring continuously, which gives a curiously in-distinct and musty effect to the plumage. Patagona gigas, the largest species, reaches a length of 84 in., and inhabits the Andes from Ecuador to Chili; it is bronze-green, with reddish underparts, and is characterised by the flapping movement of its wings, in place of the usual vibratory movement. Trochilus colubris, in addition to the green-and-white colouring, has a brilliant red throat, with a forked tall of bluish black; T. alexander of N. America has the throat of deep purple. Laphornis nas the throat of deep purple. Liphartes is a beautiful genus, extending from Costa Rica to Mexico: L. ornatus has fawn-coloured tufts with green terminal spoton each side of the neck. Laddysau mirabilis of Peru is one of the most gorgeous species; the upper plumage is a lustrous bronze-green, the under-parts are white, the throat is emerald-green, white, the throat is chief id-green, rimmed with black, and the head and crest are a vivid blue. The female is green, with white below. M. minima, called the bee H. because of its tiny size, is found in Jamaica and San Domingo, and the male is characterised by its dusky throathas a straight beak, 5 in. long, which is more than the length of body and head together. Ithamphomicron, the thurnbills, have the smallest books, that of R. mucrorhywhum, measuring only 1 m. The species of Phaelthornes are sometimes termed the hermits, because of their more sombre green and brown plumage, and also from their habit of frequenting dark woods and forests; they examine the crevices of trees in search of spiders, which form their habitual dict, and, poised in mid-air, the hermit will pass his bill over the under-surface of leaves, swallowing any insects hidden there. The H. will raidly live in captivity, and in the have been carried across the Atlantic alive.

Humpback, see HUNGHBACK.

Humperdinek, Engelbert (1854-1921), Ger. musician, b. at Siegburg. He studied at Paderborn Gymnasdum, Koln Conservatory, and the Royal School of Music, Munich, and from 1880 to 1881 assisted Wagner in the preparations for the production of Parsifal. He taught music in the conservatories of Barcelona and Colorne (1885-88), and acted as musicial adviser to Schott & Sons, pubs. (Mainz), 1888-89. In 1884 his popular choral work Das Gluck rom Edenhall was first sung, and the choral ballade Die Wallfahrl nach Kerlaar in 1987; but it was the appearance of his Hansel und Gretel, a musical mury play, which made him the appearance of his Hansel and Gretel, a musical tarry play, which made him famous. This was followed by Kongskinder (melodrama, 1896), and Dornroschen (1902). He also composed Konigskinder (opera, 1910), The Miraele (Olympia 1912), and Moorish Rhapsody (1893). Humphreys, Mrs. W. Desmond, see

Ruis.

Hanan, prov. of Central China, bounded on the N. by Hupeh on the E. by Kiangsi, on the S. by Kwingsi and Kwangtung, and on the W. by Kwelchow and Szechuen. The prov. is hilly in character, the only plain Iving around Lake Tungting. The N. of the prov. is higher than the S., and among the mis, there is thengshan, one of the five secred mis. (Wuvo) upon which the geleichted thielet of Ni was placed. the celebrated tablet of Yu was placed. The print rive are the Sinngkiang, with a basin of 39,000 sq. m, the Tszekiang, with a basin of 10,000 sq. m, the Yuengkiang, with 35,000 sq. m., and the Ling-kiang, with 80,000 sq. m. The prin-products are tea, hence, cotton, rice, paper, tobacco, and coul, the whole of the paper, toba co, and coil, the whole of the S.E. part of the prov being one vast coal-field 21,700 S1. m. in extent. More than 90 per cent of Chin't's production of anti-mony comes from 11., the ann. output being about 25,000 tons. Mining for woolfram is carried on. The print first, are the cap., Changshan, Sangt'an on the Sangthyur, and Changsface on the Slaugkning, and Changetefu on the since the time of Yuengkiang Taiping rebollion the Hunanese have been noted for their pride and obstinacy in admitting outside control. A considerable amount of lighting took place in this area during the Civil war, particularly during the 1926 campaign. sq. m. Pop. 26,171,000. Arca 79,300

Hunchback, or Humpback, deformed condition of the spinal column. Slight irregularities of the normal curvature of the some may result from various causes. such as malformation of other portions of the body, or even a well estab, habit of the body, or even a were established or walking causing irregular pressure. The presence of a definite hump, however, is generally due to the development of Pott's disease, or tuberculous ulceration of the spine. This disculous ulceration of the spine. This disease is characterised by the lodgment of therete germs in the verlebree, and the concequent disintegration of part of their tissue by discration. In many cases a fall or blow originates the trouble, the structure being weakened and becoming more liable to tubercular infection. If the disease is not checked, the body of sev. vertebre may crumble away, there is a collapse of their structure, and the spine curves sharply inwards, forming a pronounced hump and causing disproportion in the body generally Unfortunately, the early symptoms are often in definite. The child—for the discuss is characteristic of the developing period of chartection of the hoveloping period of the body structure—dors not perhaps feel actual pain in the spine but is easily fatigued and avoids invihing like vigor our action. What I must have are may be agained to induce in our he unatism. The more definite symptoms are an in ability to bend the back in stooping a continued stiffnes in the neck if the trouble be situated in the upper part of the column, and a disposition to turn the whole body instead of the trunk only when looking lackwards for an instant

The trustment when early diagnosis is pos lbic involves complete rest for the spinal column by providing the princip with a carriage in which he can be at full length on his back The apright posture should never be a sumed and the patient should spend as much time as possible in the open in. The period of rest must be prolonged until there is reason to suppose that the disint grated structures have been built up again Suitable splints should be provided to keep the parts quiet Pure air and good food are necessary adjuncts to any use of treat ment. If the disease has run its course for some time without detection and the deformity has actually set in there is little hope of a permanent cure. A certain proportion of cases have responded proportion of cases have responded favourable to operative measures which involve temoving seme of the posterior parts of the vertel ra. This operation, known as lamineetimi is resorted to when

and defence. If it are miny diverse theories to account for the exact origin of r tim all the passessions in France which the term but the most generally accepted to leen hold by henry II, without is that it was at first an association of one exacting homogo. The Fr nobility rehanded persons for purposes of rolice to to rotative these times and kelward and justice. The chief man of the H was again invaded I rance with the result that and justice The chief man of the H was ally had a court called the H moot personal rather than topographical origin of the II - which latter view is disprove I by the inequality in size of the different Hs —seems to be confirmed by the now obsolote action against the H in case of any loss by robbers the object of which according to Blackstone, was to make the H answer for the robbery unless it succeeded in capturing the felon. The term H still exists, but is now of no significance The term for any local governmental purposes, though under an old statute the H or any corresponding dis, is still lishle in certain cheumstances for damage caused by riot. The H as an equies div is now replaced by the deanery, and the H rate by the co-rate See under Highways as to repair of H. bridges.

Hundred Years' War, between England and France, 1338-1454, was begun by Edward III of England attempting to Fdward III of England attempting to enforce his claims to the Fr throne and ended by the loss to England of all her Fr conquests except (alare In 1328 (harles IV of liance d leaving no male issue, and Edward then claimed the throne in right of his mother is shella, sister of (his less But by the Salic law women vere excluded from the Fr throne, I dward a retort was that his mother could it insuit the right to him, an argument which would in any event, have ment with would in any event, have given a better claim to Charles of Navarre. The kracers actually to acknowledge have a larger Philip of Valois as their king and I dwird then submitted and did homage to Philip for Guienne, which belonged to the Ing Crown But when I hill est oused the cause of David II of scotland against I dward, the latter renewed his claim to the Fr crown assumed the title of king of France, made assumed the title of king of krance, made alliances and prepared for war, hostilities commencing as throughout list, from the cite of Planders The clust events in the period from 1339 to 1300 were the detect of the kr fleet oft Suya (1349) the compaign in Brittany (1342) the battle of (100) (1316) and, in the same year the beginning of the siege of (alais Manuschiel bayed had invaded include Meanwhile David had invaded Ingland as the illy of krance, but was heavily defeated by Queen Philippa's army it Neville 8 (toss (October 12 1346) 131 famine compelled (alus to surrender to I dwud and a truce was made with brance which was further prolonged by the Block Death In 13>> the war was renewed as terrely as before Philip had puts of the veiteles. This operation, and we as hereely as before. Philip had known as lammeet misers or to the when there are indications that the curvature four this kingdom torn with factions has caused sense compression of the spinal cord. Hundred, one of the most anct subdives of a shire and good to the pages of the million of a number of coverships for the purpose of judicial idministration, peace if the pages of the pages of the pages of the purpose of judicial idministration, peace if 1 is 13 0) the capture there of king and the pages of pade in the pages of the pages of pudicial idministration, peace in the pages of pages of pages of pages of the pages of pudicial idministration, peace in the pages of pages of pages of the pages of pages of the pages of p leln and the latter a signed promise to fre h negotiations were set afoot and the treaty of Bretigny r the Great Prace, signed in which Edward renounced all clum to the ir cown and to the ir vs of Normand Maine, Anjou and I maine, but received in return without thenion of hon az the prove of Pouton, then not hon az the prove of Pouton, then not, and the trof Calase together with throe million and crowns as a ransom to king John (May 8, 1360) War was ter king John (May 5, 1300) War was ten wed, however in 1367, owing to the Black I rine's attempt to tax the Gas-cens The latter at peaked to John's suc cesor, Charles of Lunco, who summoned the Prince to Laris and as this summons was contrary to the Treaty, the Prince started thither at the head of a large army. But failing houlth ompelled him to relin-quish his command, and thereafter France gradually won buck all the possessions,

only Bordeaux, Bayonne, and Calais remaining to the Eng. crown (1376). The war dragged on, however, through the reign of Richard II., who got into dilliculties over his poli tax to meet its expenses. Richard was unlit both as general penses. Archard was unit both as general and administrator, and when heatilities were renewed in earnest it was at the initiation of the Fr. king, who demanded from Henry IV. of England the dowry and jewels of the widowed Isabella, which Henry retained as part of John's ransom. There was no open declaration of war, but a kind of piratical warfare was carried but a kind of piratical warfare was carried on at sea, and eventually, through the dissensions between the houses of Orleans and Burgundy and the imbedility of the Fr. King Charles, England won back the sovereignty of Aquitaine, Poitou and Angouleme (1412). The distracted state of France at this time gave every encouragement to the ambitious Henry V., who demanded the restoration of all the possessions held in France by King John, the hand of Charles's daughter in marriage, and a dowry of two million crowns. The answer being evasive, Henry Invaded The answer being evasive, Henry invaded France and won the battle of Agincourt (Oct. 25, 1415), returned to England and renewed the invasion in 1417, with a larger army than before. The Burgundians having thrown in their lot with him, owing to the murder of the duke of Burgundy by the rival faction, the Fr. Gov. had no option but to acquiesce in all Henry's demands, and the treaty of Troyes was signed in 1420, recognising Henry as regent, with the right to succeed to the Fr. throne on the death of Charles. The premature death of Henry V., however, followed by the accession of the infant followed by the accession of the infant Henry VI, upset all these schemes, and though the infant Henry was duly pro-claimed king of France, the late dauphin assumed the title of Charles VII. Charles VI. having died soon after the late Eng. Vir. navmit the sound after the face Engling asserted his claims. At Crovent, in 1423, and Verneull, in 1424, the dauphin met with crushing defeats and was forced to retire across the Loire. In 1428 the to retire across the Loire. In 1428 the regent, Bedford, planned to cross the riv. and marched into those provs. in the S. which adhered to the cause of Charles. The next great event was the battle of Herrings, fought while Bedford was besieging Orleans as the key to the S. (1429). The defeat sustained by the Fr. so discouraged them that Charles was on the point of giving up the contest altogether and leaving the country when the whole and leaving the country when the whole face of thing; was changed by the advent of Joan of Δrc . After the coronation of of Joan of Arc. After the coronation of Charles VII. and the burning of the Maid of Orleans the Eng. cause in France rapidly waned. The duke of Bedford rapidity waned. The duke of Bedford quarrelied with the powerful duke of Burgundy and then tried to reconcile his affairs with the Fr. Court, and in 1145 he signed a treaty of friendship with Charles at Arras. Bodford d. in the same year, and before the new regent had reached France, Paris fell into the hands of the Fr. king and in 1144 the Eng. were glad to make a truce for two years. On its expiration Fr. troops overwhelmed Normandy through Maine and Anjon, and Burgundy and then tried to reconcile his affairs with the Fr. Court, and in 1435 he signed a treaty of friendship with Charles at Arras. Bedford d. in the same year, Joseph (8736 ft.), and in the S. Negoi and before the new regent had reached (6813 ft.). Sev. peaks range between France, Paris fell into the hands of the France, Paris fell into the hands of the 5000 and 7000 ft. Those of the High Fr. king and in 1144 the Eng. were glad to make a truce for two years. On its hills on the S. side, there reveal their full expiration Fr. troops overwhelmed Normandy through Maine and Anjou, and

then, turning S., captured Guienne, and by 1451 Calais alone remained to the Eng. by 1451 Calais alone remained to the Eng. and the longdrawn war was at an end. See F. Funck-Brentano, The Middle Ages, 1922; E. C. Lodge, Gascony under English tute, 1152-1483, 1926; H. S. Lucus, The Low Countries and the Hundred Years' War, 1929; H. Belloc, Six British Battles, 1931 (for Creey and Potters); F. M. Powicke, Medieval England, 1066-1485, 1932; Cambridge Medieval History, vols. 7 and 8, 1932-36; and H. Pirenne, History de L'Europe, 1936.

Huneker, James Gibbons (1860-1921),

Huneker, James Gibbons (1860-1921), Amer. musical critic, b. at Philadelphia. For long he was musical critic of the New Vork Sun. Among his works are Icono-clasts: a Rook of Dramatists (1905), Visionarics: Fantasies and Fiction class: a Book of Dramatists (1905), Visionaries: Fantasies and Fection (1905), Egorsts: a Book of Supermen (1909), Frunz Liest: a Study (1911), The Pathos of Distance (1913), Old Fogry, His Musical Opinims and Grolesques (1913), New Cosmopoles (1915), Baudelaire (1919), Manufach bbb. propriet (1915) Steeplejack (his memoirs, 1921). See Josephine Huneker (od.) John Gibbons Hunter, Intimate Letters, 1937.

Hungary (Magyarország), republic of Central Europe (pop. 9,316,600) lying between the Alpa and the Carpathians and including parts of the basin of the middle Danube. Its area is 35,903 sq. m. and it lianue. Its area is 3,300 sq. in, and at is an entirely landlocked country. The cap, is lindapest. It is one of the succession states of the old Austro-Hungarian Dual Monarchy. The anet. kingdom of H. always took high rank among the states of Europe in respect of ter. and pop. Although its armed forces, with the exarmough us armed proces, who the ex-ception of the Honveds, were formerly united with Austria, yet II. remained an independent state, the head of which was His Majesty Francis Joseph, the apostolic king. By unanimous vote of the National Augustic III. Assembly H. was reconstituted a kingdom Assembly 11. was reconstituted a kingdom in 1920 after having been declared a republic on Nov. 17, 1918. Following the surrender at the end of the Second World War of the Axis powers II. was occupied by the Allied Control Commission. self-gov. was, nominally, re-estab. in 1914, and after a general election a republic was again declared (Feb. 1, 1946) with a constitutional President and a cabinet. Though constitutionally a kingdom between 1920 and 1946, the throne remained vacant throughout this period, the question of the Hapes. the question of the return of the Haps-buigs having been left unsettled.

II. has almost in the contre of Europe, and before the First World War had a well-defined frontier formed on the N., N.E., and E. by the Carpathiaus, and on the S. by the rivs. Danube and Save. The whole country was in the form of an ellipse, from which a neck of land extends to the Adriatic. The Carpathians scarcely

series of beautiful pictures. The lower reaches from Bázias to Orsova are un rivalled in their majestic wildness. It was to H that I urope entrusted the work of overcoming the dangers to navigation in this stretch of whirling water. On the of overcoming the dangers to navigation in this stretch of whirling water. On the Mains are the hirs of the Alps enter Hungarian ter. One near Visegrial facethospins of the ripathians, which extend right down to the Danube. This part of the riv, flanked by torest clad into also offers a magnificent panoriana After the list World War H became considerably similar. The boundaries between H and Austria (zechoslovakia, lugo alaxia and Ruminia were fixed in general slavia and Rumania were fixed in general surf (of the Great Plain undulates from terms by the peace treety of Iranon, 200 to 400 ft above sea level Its S June 1320 As a result of this treaty, It | rare comprising the Back stand the Banat

Tive Drave, and Save Less important in the Kotos, Maros, Gran Szamos, Icme, and the Vag but many of these tubs have been divided by the bound aries determined by the freety of Trianon like the market by the state. aries determined by the freaty of Trianon the fine cards are the Frincis Joseph, between the Danube and the Tisza, and the Rega between the five of that name and the Tennes The latter canal, out by the Roms, was enlarged in 1777. The frentiers of H include the Lesser Hungarian Plain (Ris Alford) lying N w of the Bekomy forest and the greater part of the Great Hungarian Plain (Nagy Alford) stretching I of the Danube. The sufficient of the Great Plain undulates from 200 to 400 ft. also essenteed. Its S.



ON THE HORTOBIGH ITS/IN MAR DEBRECZEN

lost much of her int country with practically all her forest lands through the transfer of Iransylvania to kumania of Crostia and Slavonia to Augoslavia and of Ruthems to Cocchoslovskin the former at a was approx 124,400 s; in Her pop was reduced from 11,214,000 to 7,482 00 1 in 138 the pop was at out 8,700 000 As the result of a pichisente since 1920, it obtained sopron (Oranberg) since 1920, it obtained sopron (Granberg) from Austria In 1938, following the forced co-sion of Sudetio Austria to Germany, most of Ruthenia (1200 SI m, pop 900 000) wis ceded to H by Orechoslovakia The area of H then became about 40 100 SI in and the pop about 9,000 000 (See Also under Hist form below)

no l her belongs to H Nearly all the area is under successful cultivation (confields now take the llace of pasture land and on once sterile sandy wastes (the area now thourshing vine and The chinge has been ling by due to the introduction of the filst against (Robinsa Landard Marchand and Marchand Landard Land is t acara), which was the first tree to me acclimatised and by its protective and its influence on the chimatic con the inches made possible the growth of the trees. Although the thole of H is between 40° and 44. Not there are the divergences in interest parts between the manning mean, and maximize temps. The mean and temps in all the N to 52° F in about 9,000 000 (See the under History, below)

In the gently undulating part of the country which extends along the r b of the Danube are found H s largest lakes, the Balaton and the Feibo, only half of which now belongs to H. The former is 47 m long, with an area of 266 sq m, and contains abundance of fish, the largest and most remarkable of which is that known as the fogas In addition to the Danube, the print rivs of H are the

Nature has been very bountiful to H. in respect of minerals. From the Bronze Age onwards these have been dug and smelted. In later periods the Roms, did much mining in the country, and derived from it their chief supply of gold. Gold and silver mines are worked by the State. and silver mines are worked by the State. Coal is very abundant, but much of it is of rather inferior quality. The better quality coal is mined in the Messek Mt. in the dist. of Pécs. Nearly 14 million tons of coal and lignite were produced in tons or coal and lightle were produced in 1941. A plentiful supply of iron-ore keeps sev. large smelting works fully occupied. Copper, lead, antimony, and zinc are also found. Bauxite deposits yield half a million tons in a year. H. possesses the only opal mine in Europe. Enormous quantities of rock-salt exist in E. H. Having been worked for many centuries, some of the salt mines include subterranean excavations of great extent. The sait industry is a monopoly of the State. Asphalt and petroleum are also found. The discovery of the ollibel of Lispo in 1937 increased the output of oil from 300 tons (Jan.-June 1937) to 750,000 tons in 1913. But the most remarkable treasure is natural gas, which remarkable treasure is natural kas, when during recent years has been found by deep borings in many parts of the country. These Hungarian gas wolls are equal in extent and value to those of Pittsburg and other places in America. Mineral waters of various kinds, both hot and cold, spring forth plentifully in many parts, and are found to be very efficacious in the treatment of disease. At Rankhirlany, near Kassa, a geyser may frequently be seen uplifting a great column of water. Before the Second World War the most famous baths were those of Budapest, Trenscenteplitz, Vizakna, the Baths of Hercules, and Postyen. At the last-named place radio-active and may be successfully used in the treatment of rheumatism and allied disorders.

Education is compulsory from 6-15. There are some 8000 elementary schools with a million pupils. There are also middle and continuation schools, and six state universities with over 8000 students (1940). Religious toleration is stated to (1940). Religious toleration is stated to be one of the fundamental principles of the Hungarian State. Some two-thirds of the Mayyars are Rom. Catholics, while the remainder are mostly Calvinist.

The div. of the pop. according to language is approx.: Hungarian (Magyar) 81-4 per cent. Ruthenian 10-1 per cent. Germans (prior to their expulsion in 1945) 4 per cent. with small proportions of

8 per cent, with small proportions of Slovaks, Croats, Rumanians, Serbs and others. The pop. of Budapest in 1938 of Nikopolis, but the discrace was soon was 1,059,000. Other large cities are blotted out by the triumphant victories Szeged (140,000), Debreczen (127,000), of the soldier-patriot, John Hunyadi.

flour. Other important products are maize, barley, oats, rye, and other cereals, as well as tobacco. Vineyards occupy about 600,000 ac. Melons and other choice fruits are raised in great abundance. Between three quarters of a million to one million fruit-bearing trees have been planted on the sides of the high-roads. Much red pepper, known as paprika, is grown in some cos.

Nagyvarad (84,000), Miskole (75,000), Vipest (74,000), Pestszeuterzsbet (73,000), Pestszeuterzsbet (73,000), Pestszeuterzsbet (73,000), Pestszeuterzsbet (73,000), Pestszeuterzsbet (73,000), Pestszeuterzsbet (73,000), Miskole (75,000), Vipest (74,000), Miskole (75,000), Vipest (74,000), Pestszeuterzsbet (73,000), Pests the twelfth contury and received extensive grants of land, which, having been rotained as common property, has greatly contributed to the very remarkable pro-perity of these communities. Saxons, like all the other subnationalities in H., have retained their own language, re-ligion, and customs. The pastures of H. support a vast number of useful animals. The census of such in 1938 showed that there were \$13,000 horses, 1,882,000 cattle, 1,029,000 sheep and 3,110,000 pigs, History.—II. was founded about the

year 889 by the then savage Magyars and Ungri, who were pressing westwards across the Carpathians. St. Stephen (1997-1038) instituted the monarchy. It was he, too, who did all he could to encourage his people to embrace Christ-anity; for he estab, an eccles, polity, and endowed the infant Church by founding many bishoprics and abbeys. His countrymen cherish his name because of the refining influence his humanity exercised over their untamed and warlike ancestors, and because of the stimulus his practical good sense gave to mining and other peaceful industries. At this time the king only exercised his authority directly over certain privileged tas, and the royal demesnes; nobility and Church were largely self-governing, whilst the nation at large was, for the most part, at the mercy of the landowners. We may here notice the 'Golden Bull,' which King Andrew II. conceded in 1222 to his barons: by this charter he recognised their right to take up arms against the sovereign should be be guilty of any grave infringement of their privileges and guaranteed that the Diet should be summoned annually.

The bulk of this brief sketch will be occupied with an account of the wars with Turkey and of the relationship of II. with the sister kingdom of Austria. The Hungarians first wagod war against the Saxon kings, Henry the Fowler and Otto the Great, who gained a great victory over them in 954, and from 1241 onwards they were busily engaged in repelling the persistent advances of the Mongols or Tartars. It was under Louis the Great (1342-82) that they first gained a signal victory over the Turks by the banks of the Maritza.
This Louis was king also of Poland, and
the importance of such a victory will be
appreciated when it is remembered that it. and Poland were the natural bulwarks against Mohammedan aggression on W. Christendom. In 1396 the Sultan Bajazet defeated Siegmund of II. at the battle Panic among the latter's troops, due to the king's death, accounts for the defeat of the Hungarians at Varna (1414), but in 1456, a few months before his death, Hunyadi succeeded in raising the siege of Belgrade and scattering a formidable Ottoman host.

H. reached the summit of her glory under Matthias Corvinus (1158-90), the son of Hunyadi. His successors were weak, and the country, therefore, fell an easy proy to the Turkish invaders. In 1526 these latter, under the leadership of Sultan Suleyman, who had already captured Shabatz and Belgrade, over-whelmed the Hungarian; at the battle of Mohacs and slow their king, Louis II. Buda, the cap., was taken, and the splendid library of Matthias wantonly destroyed. Until the Peace of Carlowitz (1699), which concluded a bitter struggle between Austria and the Porte, the greater part of H. remained in Turkish hands, and a Turkish pasha presided in Buda. By that peace the Ottomans were obliged to yield most of their Hungarian conquests, but it was not till 1716, when Prince Eugeno defeated them, that II. thaily became independent of their swav. Siegnund, who was "ive of II. from 1392 to 1437, and who was chowned emperor of the Holy Rom, empire in 1433, is the first link between the crowns of H. and Austria. After Louis's death (1526), to which reference has already been made, the sovereignty of his kingdom was conferred on Ferdinand, archduke of Austria, who was elected emperor in 1558. Thenceforward it remained with the Austrian archdukes: until 1687 it was elective, but in that year it was made hereditary in the

Hapsburg family.
It must not be thought that H. submitted to Austrian rule without a struggle. The resentment naturally rising from the the resentment inturnally rising from the loss of a nutional king was aggravated by the folly of many of the emperors. Thus Leopold I. (1657-1705), in his ruthless attempt to re-eatholicise the kingdom, was responsible for the wholesale massacre of Protestants and for their alliance in self-defence with their hereditary foes, the Turks; and Joseph 11. (1780-90) com-mitted a fatal error in endeavouring to ride rough-shod over all their most time-hallowed institutions. The year of revohallowed institutions. The June of intense patriotism. The Hungarians, intense patriotism. The Hungarians, under the famous Kossuth, Deak, and others, made a desperate attempt to re-gain their former independence, A new constitution was promulgated, and for a time Kossuth was acknowledged as su-Preme governor. But in the end the Austrians, who had summoned the Russians to their aid, prevailed, and the Russians to near and, provened, and the old despotic régime was resumed. It was not until 1807 that the dual monarchy was consolidated and francis Joseph, emperor of Austria, was crowned king of H. Foreign affairs, the army, and finance were controlled by the Delegations —a body composed equally of Austrian and Hungarian deputies. Otherwise the two nations were distinct, and had their own parliament, executive, and laws.

For II. during the First World War, see AUSTRI4-HUNGARY. On Oct. 3, 1918, a revolution broke out in H. with the aim of establishing a Republic. The revolution was successful and on Nov. 16, 1918, H. was proclaimed an independent Republic. Count Michael Karolyi was chosen as President, and the Republic was known as the Hungarian Peoples' Re-public. The two Houses of the legislature were abolished, and a Provisional National Council was set up. But in March 1919 there was a second revolution under Bela Kun, who was financed by Russia. This Kun, who was financed by Russia. This resulted in a soviet gov. loing set up with a dictatorship of the proletariat. When the Republic was proclaimed in 1918 under the presidency of Count Karolyi, there seemed, to the outside world, some prospect of H. settling down to a con-stitutional form of gov. This was the moment that might have been seized by the Entente powers to prevent discontent and disruption. The moment was missed in the all-absorbing concentration on peace with Germany, with the result that Rurama, Yugoslavia and Czechoslovakia -all with more or less conflicting interests —all with more or less conflicting interests —pronticed by the policy of drift to carve up pertions of H. in detiance of the Wisoman principle of self-determination. This naturally grouped the fiercest passions in H. and the people as a whole were ready to follow any party in the country which might offer a plausible remady. It was always the intention of certain members of the Karolyi administration to ignore Constitutional methods. stration to ignore Constitutional methods and sooner or later declare openly for the Bolshevik régime of Lenin and Trotsky. With the Hungaran masses chains, in the spring of 1919, under the prospect of total national ruin, this Mana or clique, trained in Russian methods and financed by Russia, deluded the Hungarians into the belief that these imported doctrines were the sole panacea to the existing chaos. Rumania invaded II. and expelled Bela Kuu, and, after a short socialist régime, the kinscom was short Socialist regime, the kingtoin was restored in 1920 under Admira! Horthy (q.r.) as regent. Two attempts at re-storing the ex-king Karl in 1921 proved abortive.

The revision of the treaty of Trianon, by which in 1920 H. lost three-fifths of her former ter, and two-thirds of her pop., became thenceforth the head and treat of Hungarian policy. This Hungarian irredentism anned at more than the mere recovery of geographical areas, for together with the lost ters, went also a great part of the estates on which the power of the ruling aristocracy was founded. Without such a recovery H. could never aspire to a dominent position in the Danubian Basin nor assume the position of bulwark of the W. against the position of bulwark of the W. against the E. an aspiration particularly of the Magyars who regard the peoples E. and S. of Vienna as their cultural and racial inferiors. Mussolini openly sympathised with these aspirations because they seemed to involve the disruption of Yugoslavia, an aim common to Italy and H. The Rome Protocols signed in 1934 between

Italy, II., and Austria offered a show of resistance to the pascent menace of Hitlerite Germany, but even bofore the Ger, annexation of Austria had brought Germany into contiguity with Italy and II., both those countries had decided to compromise with their formidable neighbour in the hope that together they as Count Teleki, the Prime Minister, had stept a guern strong enough to secure compilited suicide circle in the resistance. neighbour in the hope that together they might appear strong enough to secure some advantages. But the theoretically 'nutual' expansionist aims of Nazi Germany, Fascist Italy, and Horthy's H. were, in practice, certain to clash, though for some time Horthy thought Germany would be too preocupled with exploiting her territorial gains to become involved in S.E. Europe. When this illusion was dispelled H. proclaimed her entry into the war against Russia as inspired by crusading motives suggested by the anti-Comintern Pact and divorced from any territorial ambitions. It was hoped in H. that their contribution to the invasion of Russia would be restricted to air reconsissance and garrison duty; but the of Russis would be restricted to air reconnaissance and garrison duty; but the Vornnezh disnater (see under Eastren Front in Second World Ward of Nov. 1942 altered the aspect of the war in the E. Soon two-thirds of the Hungarian Army—an army built up with the connivance of Hitler in definace of the Trianon Treaty—was destroyed on the battlefields of the E.; 'mutual' aid, with Germany, indeed meant that Germany always got the best of the burgain. It is true that for her complicity in the dismemberment of Czechoslovakia H. secured a common frontier with Poland; yet, having seen Poland destroyed in 1939, H. in 1940 assisted the Ger. conquest of Rumania by accepting N. Trausylvania. H. thus offered to the world an abject H. thus offered to the world an abject spootacle of period and fear. The country which had stabbed Czecho-stovakia, Poland, and Itumania in the back was now to stab Yugoslavia. There were, at this time, some ten thousand men in H. who affected aristocratic descent. in II. who affected aristocratic descent. They ruled or tried to rule the remaining thirteen millions. A majority of them regarded Hitler and his methods with acute distaste. Many of them went to gaol for the frankness of their opinions. The minority, who favoured Hitler, eccentries like Festetics who formed the first pseudo-Nazi Party in II., novre carried much weight. Their collapse came easily, not because the peasants and workers of II. were 'pro-ier, or pro-Nazi' (they were so only in the areas inhabited by Gers. to the W. of the banule), but simply because the aristocracy, reinstated simply because the aristocracy, reinstated under Horthy, had smothered every attempt to imbue the Hungarian masses with the spirit of liberal politics or educate them in democratic institutions. Having

occuring so soon after the rathication of the Treaty, explains the frenzied Hun-garian efforts to 'explain' it, especially as Count Teleki, the Prime Minister, had committed suicide eight days prior to the invasion. For Count Teleki was the 'strong' man of H. For over two years following the fall of his predecessor, Imredy, early in 1939, he had danced along the tightrope of non-intervention and non-belligerency, the abyss of a Ger. alliance always yuwning beneath him. alliance always yawning beneath him. Until the fall of France he was successful and H. was committed to nothing more than tacit non-military support of Germany. After the fall of France this attende had to change; and gradually, as indicated above, II. came more and more within the Ger. orbit. Hence, following the suicide of Teleki and the invasion of Yugoslavia, the discredited Hungarian gov. built up the legend of the strong man. Teleki, who had resisted Gernany's demands; though the only possible resistance, in any valid sense, would have been for H. to stand athwart the path of the Ger. Wehrmacht in the manner of the Yugoslavs. Teleki, by taking his own life, merely left the way open to the Wehrmacht and to his successor to continue a policy which he himself had sponsored but whose logical conand H. was committed to nothing more self had sponsored but whose logical consequences he was too cowardly to face. Thus H, had become committed to war Thus it, had become committed to war on Germany's side against the Allies and, after the Brit. failure in Greece, this seemed to be the right side. But with the success of the Med Army, H. began to reconsider her position, especially as the tide of the Russian counter-offensive was meaning to provide the Counter-offensive was sweeping towards the Carpathian lasin, and thereby threatening that portion of Transylvania which Hitler had given to Teleki in exchange for the use of the Hungarian army against the Soviet Gnon. Moreover, the Rumanian army was being decimated at Odessa, and the was being decimated at Odessa, and the more deeply the Rumanians became in-volved, the more feeble, by contrast was H.'s share in building Hitler's New Order (q.v.) in which, as Hitler refterated, each country's status would depend on the extent of its individual positive contribuextent of its individual positive contribu-tion. But the most pressing need, as H.'s rulers saw it, was to preserve the foundations of the regime and the power on which it rested. Hence in July 1943 was issued a decree authorising the minister of the Interior to form armed auxiliary police formations. As Kallay, Teleki's successor, said, 'In II., as in Germany, there must not be another 1918.' But the factor now disturbing the balance was fear of the effect, of military with the spirit of liberal politics or educate them in democratic institutions. Having secured N. Transylvania, H. pad for her bargain by finding herself burdened with a new frontier rebuilt, politically and economically, in such a manner as to be little else than a Ger. lever for putting pressure ulternately on the two victims, H. and Rumania.

The pact of 'eternal friendship' with Yugoslavia signed Doc. 12, 1940, seemed apperficially to denote a change of policy, with sev. different voices and assume various masks; but behind them all was the face of the stubborn, greedy, reway and within two weeks from that time actionary landlords who were the real they had been driven out of H., and with rulers of H.

In Jan. 1944 the increasing rapidity of the Russian advance in the direction of the Carpathians threw Hungarian gov. into great perturbation, and mulisters were now telling the people that they must prepare to defend their frontiers against any enemy, from whatsoever quarter he might come. The Gers, took drastic measures to ensure that II, should not desert the Axis (q.v.). Horthy was ordered by Hitler to a conference at Obersalzburg (March 16) where he was forced to agree to the entry of Ger. troops into H. and to the dismissal of the Kallav gov. When Horthy returned to Budapest gov. When Horthy returned to be some on March 19 he found that Ger. troops on tored the city. The new had already entered the city. The new Hungarian gov. under Sztojay now dis-solved all the liberal or democratic parties as well as associations and clubs not of a clearly fascist character; but the chief offorts of the gov. were devoted to the persecution of the Jews who, in spite of all decrees against them, were still playing a considerable part in the economic life a considerable part in the economic life of the country. Hut, soon the persecutors of the Jews had to the law about the safety of their own skins. The Russians were already in E. H. and making great progress. The defection of Rumanu from the Axis (Aug. 1914) led to a strong movement in H. for conung to terms with the Allica but the approximent that Puesla Allies, but the announcement that Russia had promised Transylvania to Rumania was a sufficient inducement to the Hunwas a suncern inducement to the Bull-garians to continue the war. A few days later Russian and Rumanian troops crossed the Rumanian frontier into II. Between Oct. 8-10 they had crossed the Tisa, taken Szeged and advanced to within 60 m. of Budapest and also taken Debreczen. Upon this, Szalasy, leader of the Nyilas or Arrow Cross organisation or movement (comprising a score of fac-tions of a pro-Nazi or anti-democratic character produced by the short-sighted repressive policy of the aristocratic oligarchy), carried out a coup d'état (Oct. 15) by which Horthy was forced to resign and Szalasy in-talled himself as acting-Regent.

Early in Nov. Pest was under siege by Early in Nov. Pest was under siege by a Russian army, white unother Russian army, advancing up the Danube from the direction of Yugoslavia, reached Lake Balaton on Dec. 5, and soon the Hed Army was closely investing the whole of the cap. Later in the month Gen. Miklos was appointed prender by a Provisional National Assembly to reverse his predocessor's policy. This his provisional gov. did by declaring its readiness to conclude an armistic with Russia and the gov. did by declaring its readiness to con-clude an armstice with Russia and the other countries with which II. was at war and to declare war on Germany. Ger, resistance in Budapost, however, sup-ported by Szalasy's followers, continued till Feb. 13, by which time a largo part of the city had been reduced to ruins. During the ensuing few weeks heavy fighting took place between the Russians and bources of H.'s national wealth were thus the Gers, around Lake Balaton, but about put under direct Soviet control and

then went the Szalasy gov., while that of Miklos now became the effective gov. for the whole of H. (For details of the fursian invasion of Hungary and the siege of Budapost, see under Eastern Front or Budapost, see under Eastern Front or RUSAG-GERMAN CAMPAIGNS IN SECOND WORLD WARD, At MOSCOW (Jan. 20, 1945) the Provisional National Gov. of Miklos concluded an arnistice with the United Nations by which H. undertook to withdraw her troops within the frontiers of II. as they existed at the end of 1937: of II. as they existed at the end of 1937; to pay reparations to Russia, Czecho-slovakia, and Yugoslavia to an amount equivalent to 300,000,000 Amer. dollars; while the Vienna Arbitration Awards of 1938 and 1940 assigning N. Transylvania to H. were declared null and void. Recruiting was begun in Feb. for the eight diva, promised by H. for the war against Germany. In March the gov. brought into operation a Land Reform Bill based on the recommendations of the National on the recommendations of the National on the recommendations of the National Peasant Party, involving confiscation of all large estates. On Aug. 27 a Russo-Hungarian Trade Agreement was signed providing for a reciprocal exchange of Hungarian goods and for extensive Soviet participation in the control of Hungarian industry, production, communications, and banking. The privileges thereby conterred on Russia provoked a protest from Great Britain and America, and the ratification of the agreement was deferred by the Hungarian Assembly. In the new by the Hungarian Assembly. In the new gov. the Smallholders, Communist, and Socialist-Communist 'Parties were all represented, but in the ensuing election headed does not be the Allied Control Commission headed by Marshal Voroshilov, Soviet commander-in-chief, the Smallholders obtained 246 seats against 71 Socialist, 67 Communist, and 22 National Peasant; and Zoitan Tildey, leader of the Smallholders, became Prime Minister. Tildey's coultion row, on Dec. 11 dissolved the conlition gov. on Dec. 11 dissolved the Russo-Hungarian Trading Company for-med after the conclusion of the Trading Agreement mentioned above. Later it issued a decree expelling from H. all Ger. speaking residents, numbering 500,000. in addition to the Gers., numbering about 250,000, previously ordered to leave.

H. lost more than two-thirds of her annotal wealth in the war. She had no cap, to replace the losses suffered in annual stock and arric, machinery. At the same time she had to provide for the feeding of a large Soviet army of the feeding of a large soviet army of the grounding time. occupation. Her communication system occupation. Her communication system was destroyed or dislocated during the fictee battles. Her reparation liabilities compelled her to pay £75,000,000, of which two-thirds were due to Russia and the remaining one-third in equal shares to Cree hoslovakia and Yugoslavia. In fulfilment of the commercial agreement of Aug. 1945 with the Soviet Union joint Soviet-Hungarian companies were founded for the exploitation of Hungarian bauxite deposits and ollifelds. The two greatest sources of H.'s national wealth were thus management. Similar companies were elimination of liberal and social-demo-founded in respect of Hungarian air com- cratic elements and an increasing orientamunications and riv. navigation. Following the Potsdam agreement all shares in Hungarian undertakings which were in Ger. hands were transferred into Soviet possession. This factor placed Russia in possession. The factor placed runsia in 1917, had destroyed the greater part of the position of directing the management of H 's agric. implements, half the cattle and horses, and thron quarters of the sheep. H.'s only hope was that the W. would All are (1949) being replaced. The percelise that by not leaving her to her fate in manent reconstruction of main buildings, it protected its own spiritual dominion. In March 1947 the United States sent a trains has been in progress for some time

tion of H. towards Soviet Russia both in domestic and foreign affairs.

domestic and foreign affairs.
Much reconstruction work has been done
since the end of the war. Fighting, by
1945, had destroyed the greater part of
H 'a agric. implements, half the cattle and
horses, and thros quarters of the sheep.
All are (1949) being replaced. The per
manent reconstruction of main buildings,
called bourses roads, transpays, buses and



L.N.A

A TRADITIONAL PROCESSION OF VINEYARD WORKERS IN A HUNGARIAN VILLAGE

note of protest to the Russin chairman of the Allied Control Commission for II. against Soviet interference with the non-Communist Gov. of Half accused Russia of unin-titled interference in the internal affairs of H by attempting to substitute a communist dictatorship for the existing freely cie tod gov, and said that the United States was impelled at this time to express its feeling of concern at the political crisis

which has been precipitated in H.'

The Peace treaty of Paris with the Allies was ratified by the H. National Assembly on July 2, 1947 and by President Tildy on Aug. 8, 1947. The Russian occupation troops were then officially and the president of the property of the president o

and continues at remarkable speed Moreever, hospitals equipped in the most modern way, schools, a unit, nurseries, people's college (a revolutionary resi-dential experiment in education at no cost to the 6,000 sons of poor farmers or workers in them) also here and there throughout the country. H is a partly-socialised state and so far about 700 entrprises have been nationalised, while the state of the state more than 3,000 with fewer than 100 emplovers cach remain at present in private hands. The small-holders number about 1,790,000, who have been allotted from five to fifteen a res—the latter figure is for farmers who have gained a diploma. withdrawn. Another general election took place on Aug. 31, 1947 in which the communists gained only 22 3 per cent of the total votes. However, all developments since point to a rising forcible stocked with ten home-manufactured tractors, sprayers, threshing-machines and other apparatus, together with 25 trained workers. By 1949 the State had nationalised the Church-sponsored schools and dispossessed the clergy of 1,000,000 ac., granting the Church only about 27,000 ac. out of H.'s 20,000,000.

In Feb. 1949 the traditional conception of liberty of consequence of the whole W.

In Feb. 1949 the traditional conception of liberty of conscience of the whole W. world was ruthlessly violated by the barbarous trial before a people's court' of Cardinal Josef Mindszonty, archbishop of Esztergom and Prince Primate of H., on charges of disloyalty to the State and 'anti-democratic' activities, followed by conviction and a sentence of life imprisonment and configention of all property ment and confiscation of all property. Six other persons were also charged with six other persons were also charged which similar offences, including Prof. Justin Baranyai, Irince Paul Esterhazy, and Dr. Andras Zakar, the cardinal's private secretary, all of whom were sentenced to varying terms of imprisonment. The specific charges against the cardinal, which included also alleged violation of foreign exchange regulations and smuggling refugers, were, in themselves, no more than instruments of communist policy devised for the purpose of removing those whom it regarded . its enemies. essence the trial was really the manifesta-tion of the great conflict between idealist religion, as expressed in Christianity and embodied in the Rom. Church, and materialism as expressed in communism and embodied in the Soviet inspired gov. of H. The eardinal, son of Suabian peasants from the fervently catholic W. of H., had always treated the communists simply as men who were positive believers in a faith without a God, and more to be opposed and prayed for than negotiated with, and that attitude was reinforced by the intractability of his own character, by his right-wing political opinions, and by the tradition of the catholic lucrarchy in H., which throughout hist, has always supported the authority of an almost feudal state. At the beginning of 1948, when the feud between him and the communists became open battle, the Cardinal munus accame open ontro, the Cardinal refused to give the new communist state any declaration of loyalty except on the conditions of freedom for all Catholic associations—sev. of which had been banned under the anti-Fascist law—and resumption of diplomatic relations with the Vatican. In the minds of the whole people of H. he had become the undeclared leader of a political opposition as well as of a religious faith. The Communists tried to persuade their own people and the world that they were not against religion, but against the cardinal, whom they accused of seeking to restore a thoroughly unjust and discredited society. In theory religious worship in H. was free; religious teaching compulsory in the nationalised schools, and, officially, all children wore bound to attend church. But the new People 8 Colleges were teaching the description of the control of the co ing Marx's doctrine about the rôle of organised religion in hist. The Calvinist Church made its peace with the gov. and negotiated exemption from nationalisation of its lay schools. The cardinal refused between the two tongues. Since his day

to negotiate and therefore none of the catholic lay schools was exempted, and he always forbade the monks and nuns to teach in the State schools. In short, the cardinal's protest was against those dangers to the human spirit which every-where in the E. of Europe were unfolding under communism with the result that persecution began with vilification and ended in the tragic farce of his trial. There never was a chance from the moment of his arrest that the cardinal might be accusted exact for the results. moment of his arrest that the cardinal might be acquitted or set free for the purpose of the 'people's courts,' whether in the Soviet Union or in the communist countries around, was not to try their prisoners for guilt or innocence but to arraign and condemn the enemies of the communist state, and proceedings of this hind were an indifferential past of the communist state, and proceedings of this kind were an indispensable part of the process of breaking down the opposition wherever communism bad selzed power. The appointed end of a conviction following on a 'confession' was, as usual, extorted by third-degree methods, the familiar prelude at this trial to the inevitable sentence. Immediately after the trul the United States was considered. incutable sentence. Immediately after the trust the United States gov. considered the possible course of taking the case to the United Nations. The House of Representatives unanimously adopted a resolution urging the United States gov. to protest against 11.'s treatment of the cardinal—through the United Nations or by other appropriate means. Numerous Hungarian officials in the United States, whicher the Astions counter the Course of the United States, and the United States, which the Astions counter the Course of including the Acting-consul general, in Inchiong the Acting tousin schema, in the Month of the Country. Dr. Evatt, minister of external affairs, Australia, in the House of Representatives, and that the issue was much broader than the treatment of the cardinal, and appeared to involve the general question appeared to involve the general question of rights guaranteed under the treaty of of rights guaranteed under the treaty of pence with II. to which Australia was a party, and which included freedom of religion and freedom of speech. He did not exclude a possible miscarriage of oust ce not only in relation to the cardinal but also to the leaders of the calvisist and bitheran churches in H. Thus matter was destined to be brought before the treneral Assembly of the United Nations, Mr. Ernest Bevin, brit, foreign scretary, protosted to the Hungarian minister in London at the Hungarian gov.'s refusal to allow representatives of the Brit. legation in Budapest to attend the trial. He also directed the Minister's attention to the very strong feeling evinced by public opinion in Britain over the whole circumstances of the case.

language.—Few languages offer more fast mation to the philologist than Hungaian. Until the seventeenth century it seemed a pure anomaly, for it was clearly not oven a distant cousin to the neighbouring Ger., Wallachian, or Russian. In 1769 an astronomer, John Sajnovics, visited the Laplanders in Norway, and was impressed by the similarity of their increasion that he forgot for the moment about his astronomy and wrote justead a book (in Lat.) to demonstrate the affinity

many other facts have come to light which a singularly pure and refined style both go to prove that Magyar belongs with yoguland Ostlak to the Ugric branch of divise. From 1772 to 1830 there was a the Finno-Ugric div. of the Ural-Altale family. There follows a brief enumeration of the most striking peculiarities of George Bessenyei (1747-1811) and Bone-Magyar: (1) It is a language of affixed. divising the means for my father, means for my father, means for my father, means for my father. tion of the most striking peculiarities of Magyar: (1) It is a language of affixes. Alyamer't means 'for my father,' m being 'my 'and ert' for.' (2) The active verbahave definite and indefinite forms: latom means 'I see him, her, or it, and latok merely 'I see.' (3) There is no gender: 'he,' she,' and 'it 'are not even distinguished. (4) Extra syllables give the verb a potential, causative, or frequentative sense: verhet means 'he can beat'; verel, 'he causes to beat'; vereet, 'he causes to beat'; vereet, 'he often beats.' (3) Nouns have possessive suffixes, which vary according to number: lollunk, 'our pen'; tollaink' our pens.' Magyar is, moreover, rich in verbal derivatives, has a copious yocabin verbal derivatives, has a copious vocabulary, and is decidedly musical—and therefore adapted to poetry—by reason of the harmony of its consonants and vowels.

Literature.-The national literature of H. is, comparatively speaking, young. Indeed, there was little life in it till well on in the eighteenth century. The cause if this is not far to seek. Ever since the nt this is not far to seek. Ever since the priests from Germany and Italy introduced Christianity during the eleventh century, Lat. has been the official language. It was spoken at court and in the churches: it was taught in the higher schools, and so became the language of the educated classes, and finally it was introduced into the administration. It was introduced into the administration. Lat. was not discontinued in the schools till 1790, and was talked in Parliament as late as 1825. The oldest written fragment in Magyar belongs to a funeral oration dating from the early thirteenth century. During the pre-lifeormation and Reformation periods (1437-1600) men of letters were chiefly engaged either in translating portions of the Bible or in writing voluminous rhyming chronicles. King Matting Parliaments of the Bible of the little o minous rhyming chronicles. King Matthias Hunyadi was a true Medici to his countrymen in that he made his court a centre of intellectual and artistic life, gathered together a great library, and invited to his kingdom men of learning from all parts. In 1173 the first book was printed in H., namely, Budar Krónika, a hist. of H. up to his day. During the seven-teenth century many writers distin-guished themselves in the fields of theology and philology, but none attained to such high honour as the poots Nicholas Zrinyi (1620-61) and Stephen Gyongyossi (1629-1705). The former wrote a national epic, the Zrinyinsz, after the manner of Tasso, in which he sang of the powers of his ancestors. There is life in his character followers of Arany, such as Joseph Kiss enactional, if appolished. The Venus of Muriny of Gyongyössi, though spollt lingarian stage with conedies and somewhat by an excess of mythology and metaphor, is redolent with an Ovidian grace of melody and descriptive charm. In the eighteenth century, not unjustly called the 'age of decadence,' the only outstanding name is that of Francis Faludi (d. 1779), the Jesuit, who developed and philology, but none attained to such

tive of the classical school, who took Lat. noets as their model. The former The former dreamed of being the Voltaire of II., whilst virag wrote epistles and odes which fully account for his proud title of 'the Magyar Horace.' Francis Kazinezy (1759-1831), Francis Kazinezy (1759-1831), who wrote readable didactic verse and good blography in prose, was the leader of the movement for language reform. Alexander Kisfaludy (172-1844), the author of the famous lyrics. Himfy's Love, was brother to the more celebrated Charles Kisfaludy (1788-1830), who may truly be said to have regenerated, if not created, said to have regenerated, it not created, national drama. Two other notable poets of this period are Francis Kolcaey (1790–1838), the idealist, who composed the Hymnusz, now a national anthem, and Joseph Katona (1791–1830), who wrote the fine historical tragedy 'Bank Ban' (1820), and is considered to be one of the greatest of Hungarian dramatic poets. One of the foremost of H.'s poots is Michael Vorosmarty (1800-1855). Had he left only his trans. of Shakespeare behind him, his name would have lived; behind him, his name would have lived; but as it is there are many fine lyrics and epics, such as the woefully tragic Two Castles, which prove Vorismarty to be a great original poet besides an excellent translator. In the splendour of his lyrics, however, he was surpassed by Aloxander Petofi (1823–1849), whose freshness, rapture, sincerity, and passionate love of Naturo have rarely been equalled in the poetry of any nation. And side by side with Petofi will ever stand John Arany (1817–1882). In his immortal epics, Toldi and The Death of Buda, as in his ballads, he absorbed all that is best in the old Hum and Magyar legend, whilst in the old Hun and Magyar legond, whilst in creating Nicholas Toldi he touched indeed the very depths of Hungarian character. The carliest historical novelist was Baron Nicholas Jósika (1794-1865), an enthusiastic admirer of Scott. The humour, spontaneous faculty for inven-tion, and irrepressible delight in story-telling of Maurus Jókai (1823-1904), explain at once his unbounded popularity as a writer of fiction.

The years 1825-19 proved a period of national revival, but this period was followed by one of less distinction, popular literature giving way to a litera-

anch Benedek.

In mod. Hungarian drama three schools may be discerned: the folk-drama, represented by Edward Toth, the neo-romantic drama, to which such writers as Engen Råkosi and Louis Dóczi belong, and the school of Gregor Csiky to which, among others, Francis Herczeg belongs. Naturalothers, Francis Herezeg belongs. Natural-ism in modern literature is represented by S. Brody (1863-1921), T. Kobor (b. 1867), and Z. Ambrus (1861-1932). The period-ical 'Nyugat' (West) founded in 1908 by Ignotus (Ilugo Velgelsherg, b. 1869) exerted a modernistic influence and counted among its chief contributors the lyric poets E. Ady (1877–1919) and D. Koszto-lányi (1884–1936), M. Babits (1883–1941), stylist and translator, and the naturalistic novelist, Z. Móricz (1879–1942), D. Szabós (1879–1945) and L. Zilalys (b. 1892 and living in America) exerted a great in-fluence after the First World War. Folkhierature is represented by the novelist J. Kodolány (b. 1899), and the poots G. Illys (b. 1902) and J. Erdelyi (b. 1896). Among Hungarian authors with an international reputation and living abroad are: 1903), M. Leve, J. 1895), and Kormendi (b. 1900).

Ari.—II. possesses a beautiful national art, but much of importance from the Middle Ages was destroyed in the wars with the Turks. The flat-rooted basilicas often show Lombardic and Byzantine influence in their decorative details. The shows the transition to the Gothic style which came to II. from France. Among other important buildings dating from the fourteenth to sixteenth centuries are St. Michael's Chapel and the Cathedral in Kosize (now in Czechoslovakia), the Black Church in Brasso (Transylania, 1383–1421), the Benedictine Church in Sopron, and a number of castles built by kings and nobles, e.g. that of Vajdahunyad. Biblical subjects began to be used in the and there are tombs and wooden and bronze sculptures which date from the fourteenth century (e.g., the statue of St. George in Prague by the brothers Kolozs-

vári). Rennais-ance art-forms were, with few exceptions, imported from Italy rather than of native growth, and little has been preserved. There was, however, a native revival in the Baroque period, which prorevival in the Baroque period, which produced somewhat ottentatious churches (the cathedrals of Gyor, Nyttra, Kalocsa) and palaces, and many W. H. tns., such as Gyor and Pozsony received their present stamp at this time. Many H. artists, such as the two painters Mányoki and Bogdán, worked abroad, whereas much was done in H. by Austrian artists. The representative architects in the class. period were M. Pollack (National Museum, period were M. Pollack (National Museum, de la Hongrie, 1939; Zoltan Baranyi, Budapest) and J. Hild, who designed the cathedral at Eger. The second half of the nineteenth century saw the creation of the main buildings of Budapest: the parliament (I. Steindil), opera (M. Yul), 1847.

HISTORY: C. M. Knatchbull-Hugesson, The Political Evolution of the Hungarian Kurio (A. Hauszmann) etc. Other archi-

Victor Rókosi and Alexius
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uncis Herozeg belongs. Naturallern literature is represented by
1863-1921, T. Kóbor (b. 1867), there are two trends: one towards there are two trends: one towards realism, represented by such artists as L. Petri, I. Pásztor, Z. Kisfaludi-Strobl and I. Szentgyórgyl and another towards a styllsed formalism represented by I. Sinay, F. Pátzay, O. F. Beck, M. Vedres, E. Kalmár, G. Csorba and A. Koesis.

Painting, after its early beginnings in the Byzantine style, made great developments from the fourteenth to the beginning of the sixteenth conturn.

ments from the fourteenth to the beginning of the sixteenth century. A fine example is the altar-piece at Esztergom. In the first half of the nineteenth century painting, influenced by Vienna, moved from classicism to romanticism (Markó Barabás). After 1848 national hist, begans the point the result of the control of th came the main theme (Madarasz, Benezúr) Chef among genre and landscape painters were Paal, Munkússy, Mészóly, Med-nvánszky. French naturalism and im-pressionism influenced Iványi-Grunwald, Ferenczy, Thorma, Méti, Vaszary, Fényes, Cook, kernstock and Rippl-Ronay among others. Most recently painters such as Marity, Czobel, Rudnay, Egry and Bernath have come to the fore still under the influence of expressionism.

H. music occupies a characteristic position between E. and W. The oriental streak is clearly discernible in the folk-music, but apart from this H. music was, until recently, completely W. Euro-pean in style and tonality, when B. Bartok and Z. Kodaly, both of whom are extremely interested in folk-music, made great use of it in their own compositions, thus giving their music a markedly national character. It was mainly due to Fr. Liszt, Fr. Erkel (nincteenth century). and their predecessors S. Tinodi (sixteenth century) and J. Kajoni (swenteenth century), that an interest in H. music was awakened in W. Europe. The chief modern composers are J. Adám, G. kosa, L. Bardos and A. Veress, all influenced by Bartók and Kodály.

See also Balkans; Budapest; Dan-se. River: Danubian Question; MAGYARS.

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and C. Rosner, and Painting, 1918.

Music: E. Haraszki, La musique hongroise, 1933; A Companion to Hungarian Studies (Budapest), 1943; Z Kodaly and D. Bartha, Die ungarische Musik, 1943, indefinite schwiffen issually indefinite schwiffen issually

Hunger, indefinite sensation usually referred to the stomach, but also combined with a non-localised feeling of weakness or faintness. Normal H. is not of necessity strictly periodic, but training may result in its recurrence becoming regular. In its earliest stages no suffering accompanies it, but later a gnawing pain sets in at the epigastrium, followed by weakness, and finally by the delirium of starvation. The general faintness is normally removed by the introduction of solid or sem solid nutriment into the alimentary tract, even though the stomach is not used, as in the passage of easily assimilated food into the large intestine. The almost immediate alleviation of suffering may be caused by the free secre-

Development of Hungarian Constitutional Liberty, 1908: A. B. Yolland, Hungary The Nations' History Series,' 1917: Series,' 1918: Series,' 191 tracts between the Oxus and the Caspian in the days of Attila's conquests. In 484 they inflicted a crushing defeat on their Persian neighbours under Peroz, who was slain in battle, but during the following century their power was broken by the aggressive Turks. (3) The Hûnas, who made inroads into India were contemporary with the Ephialites, and undoubtedly belonged to the same wave of barbarlan migration. (4) But hist, has most to say about those savage hordes of H. who contributed so largely to the dis-H. who contributed so largely to the disintegration of the Rom cupire, and who from A.D. 372 to 4.3 were continually from A.D. 372 to 4.53 were continually threatening, nay thrusting back, imperial confines. An army of H, under Balaiair, overcame the Vlani, who dwelt between the Voga and the Don, completely disorgamised the empire of the Ostrogoths (Greutungi), and innally routed the Visigoths (Tervingi). These tribes were driven to seek new homes between the Parth, and begular but in threat between Pruth and Danube, but in time their ferocious conquerors wrested even these lands from them and obliged them to retreat still farther, this time beyond the Danubian frontier. Two facts show that Rom. supremacy was already on the wane: Emperors had begun to callst the arms of the Hunnish invaders against other foes, and in 132 Theodosius II, agreed to buy peace from Rhuas or Rugulas, their king, by an ann. payment of 350 pounds of gold. surering may be caused by the free secretion of gastric piece which may be brought about by the ingestion of indigestible substances. Abnormal H-accompanies some diseases, particularly those associated with marasmus. Other diseases cause morbid appetites, as the craving for chalk and lime, etc.

Hungerford, par. and tn. of Berkshire, England, on the Wilts border. The anct. name was Ingleford, meaning for dot fit.

armies before the walls of Constantinople; armies before the walls of Constantinopie; in 451 his progress westward across the Rhine was only stayed after a terrible battle on the Catalaunian plains (near Méry-sur-Seine), and in the following year, after razing Aquileia and the cities of Venice, Attila was confronted with Pope Leo I. on the banks of the Mincio—an interview which ended in a retreat of the H beyond the Alps. Next, was Attila. H. beyond the Alps. Next year Attila d., and in 454 the Goths, Gopide, and Suevi avenged his insolent victorics near the R. Netad in Pannonia, where 30,000 H. were slain. The Hunnish nation never survived this calamitous defeut; their tribes dispersed, some settling in the Dobrudzha, others in Dacia, and others, again, returning to their old haunts- the S. steppes of modern Russia. Perhaps the Bulgarians are at the root a Hunnish people. See M. A. Craphekn. Turks of Central Asia, 1918; R. Saffet, Contribu-tions à une sincère histoire d'Attila, 1934;

K. Lot, The Invasion Germ, 1935; R. Grousset, L'Empire des Steppes, 1939.
Hunstanton, watering-place of Norfolk, England, situated on the Wash, 15 m.
N.E. of King's Lynn. New H. stands about 1 m, from the old vil., and possesses a pier, a wide ext a see of sand, and a lighthouse with a need light, visible for 16 m. Pop. 3500.

Pop. 3500.

Hunt, Alfred William (1830-90), Eng. painter, b. in Liverpool, son of Andrew H., a landscape painter. He won the Newdigate Prize poom in 1851. He exhibited landscapes in oil and water-colour at the Royal Academy, and took up nainting professionally in 1861. His best pictures are in water-colour. Fine examples are in the Tate Gallery, London, and the Walker Art Gallery, Liverpool. See F. Wedmono. in Magazine of Art, 1891.

Wednero, in Magazine of Art, 1891. Hunt, Honry (1773-1835), political agitator, the son of a Wiltshire farmer, on agitator, the son of a whishire fariner, on whose land he worked. For some years he worked in conjunction with Cobbet, and in 1810 they shared the same celling good, to which they had been committed for their political opinions. He mitted for their political opinions. He more than once stood for Pathament, but he was nover elected. He was an active member of the Hampton Club, and he presided over the meeting in St. Peter's Field, Manchester, in Aug. 1819, which, owing to the intervention of the soldiers, is known as the Peterloo Massacre. There is no doubt that he was of value to the cause of which he was an advocate. He pub. his Memoirs in 1820, and his Correspondence appeared in the same year. There is a worthless biography by R. Huish (1836).

The quality of the verse was not years. such as to merit much success. H. began to contribute dramatic criticism H. began to contribute dramatic criticism to the News, and a selection of his articles was reprinted in book form two years later. In 1808 H. and his brother John started a newspaper, the Examiner, and for thirteen years wrote largely in its columns on many subjects, taking part not only in its literary direction, but also contributing political leaders. His persistent attacks on the character of the Prince Regent led to a gov. prosecution



LLIGH HUNT

of the brothers in 1812, and they were sentenced to two years' imprisonment. It was while he was in prison that Thomas Moore introduced him to Byron, which was the beginning of the famous friendship between these men. At this time, too, he made the acquaintance of Keats, and ne made the acquaintance of Kears, and mtroduced him to Shelley. He pub. ser. vels. of poems, including The Story of himma (1816). In 1822 H. wat to Italy to join Byron, with whom later he courrelled. In 1825 he returned to English land, and three years later he pub. Lord Byron and some of his Contemporaries, which brought a hornet's nest about his ears. All this time he was working very hard. contributing to the newspapers, citting periodical, writing dramatic citicism and book-reviews, and every now and then issuing a book. He wrote a novel Sir Ralph Laher (1832), and a vol. Huish (1836).

Hunt, Leigh (James Henry Leigh-)

(1784-1859), author, was educated at Christ's Hospital School, London, to which he went from 1792. He was a shy, nervous, sensitive lad, and at a very early tage he read poetry and began to write verses, which his father collected and publin 1801 under the title of Jurentia, or A Collection of Poems uritten between the ages of twelve and sixteen, by J. H. L. Hunt. Owing to the elder Hunt's energy, a large subscription was obtained, and the little book passed through four eds. in three on Christianism, and he reprinted the best

high praise from Carlyle. It was as a poet that II. desired to achieve fame, but it cannot be said that his ambition was ever satisfied. His verse was easy and agreeable, but it lacks dignity: he had not the lyrical gift, and has never taken the place he desired to fill in the roll of Eng. poets. It is as an essayist that he has his claim to remembrance. In this has his claim to remembrance. In this branch of letters he does not, of course, rank with Lamb or Hazlitt, but he has undoubtedly, on a humbler plane, an individuality and a charm of his own. His wide reading and his knowledge of the world gave him ample scope for inding suitable subjects for his innumerable papers, but he is never happier than when writing of 'My Hooks,' or discoursing about London, or describing the country. His Authiography, and his Corresponding His Autohiography, and his Correspondence, ed. by his eldest son (1862), are the prin. authorities for his life. The character of Harold Skimpole, the sponging amateur artist, in Dickers' Bleak House, was founded on H. and had to be altered was founded on H. and had to be altered on account of its close resemblance. Nee S. Collins, Keats, 1885; W. Hazlitt, The Spirit of the Age, 1891 (Everynan's Library, 1910); lives by E. Blunden, 1930, and L. Landré, 1936, and also the Autobiography, ed. with notes by J. E. Morpurgo, 1949.

Hunt, Richard Morris (1828-95), Amer. architect. b. at. Brattleborough. Vermont.

Hunt, Richard Morris (1828-95), Amerarchitect, b. at Brattleborough, Vermont. He came to Europe to study, chiefly in Paris, where, in 1851, he was appointed inspector of works on the buildings connecting the Tuileries with the Louvre, and where he designed the Pavillon de la Bibliothèque. Iteturning to New York in 1855, he designed the Lennox Library, the Stuyvesant, and Tribune buildings; also public buildings in Princeton and Yale. He obtained the gold medal of the Institute of Brit. Architects for his Administration Buildings at the Chicago Exhibition (1893). He did much to raise Amer. architecture in the opinion of other countries, and helped to found the Amer. Institute of Architects. There is a fine memorial to him in the well of Central Park, New York City.

memorial to him in the well of Central Park, New York City.

Hunt, Thomas Sterry (1826–92), Amer. chemist and goologist, b. at Norwich, Connecticut. He wrote a remarkable 'Essay on the History of the Names Cambrian and Silurian' (Canadian Naturalist, 1872), and his works include 'themsel and Geological Essays (1875) Many at Manager. Geological Essays (1875), Mineral Physio-logy and Physiography (1866), A New Basis for Chemistry (1887), and Systematic

Mineralogy (1897), and Systematic Mineralogy (1891).

Hunt, William Henry (1790-1861), Eng. water-colour painter, b. In London, and studied with John Variey. He was a prominent member of the Society of Painters in Water Colours, and may be regarded as one of the chief figures in the great Eng. schsol. His prin. pictures were of interiors, figures, and still life.

Many fine examples are in the Victoria and Albert Myseum, S. Kensington.

Hunt. William Holman (1827-1910).

Hunt, William Holman (1827–1910), Eng. painter, b. in Loudon, joined the Royal Academy schools (1844), gaining admission to the exhibition with Hark

It was as a dieve fame, but ambition was und was easy and miv: he had as never taken to interest that he sayist that he ance. In this archive is content of course. and Isabetta (1833). In 1854 came, perhaps, his greatest and certainly most successful religious picture, 'The Light of the World,' presented to Keble College, Oxford, by the purchaser, Mr. Combe, of which a modified replies was painted in 1901 and exhibited in the chief cities of the Britt Auditor. A right to Pulse. of the Brt. cupiro. A visit to Palestine produced 'The Scapegoat' (1856), a meticulous study of the scenery of the Dead Sea: 'The Finding of Our Saviour in the Temple' (1860), now at Brrningham: 'The Shadow of Death' (exhibited 1872). 1873), representing a shadow of the Crucifixion thrown on the workshop wall by the stretched arms of Jesus, is at Manchester: ' The Trumph of the Innocents,' of which there are two pictures, at Liverpool and Birmingham, begun in 1875, was not tinished till 1885. His best-known lader picture is 'May Day on Magdalen Tower, Oxford' (1891). H. remained to the last a fervent adherent to the principles of the Pre-Raphaelites. The best statement of a tervent adherent to the principles of the Pre-Raphacities. The best statement of his ideals and of the inner hist, of the movement is in his History of Pre-Raphacitism (1907). He received the Order of Merit, and was buried in St. Paul's. See Ford Medox Brown, Pre-Raphacitie Drawes and Latters, 1900; J. Phythian, Pre-Raphacitic Brotherhood, 1906; L. Housman, Pre-Raphacities in Art and Poetry, 1933.

Hunter, George (1863–1946). Scottish

Art and Poetry, 1933.
Hunter, George (1863-1916), Scottish missionary, b. at Alerdeen. At 26, left Scotland, and set out on the long trek to Chinese Turkestan. At Urumtsi, cap, of Chinese Zungaria, he built himself a rough home; and for many years he travelled in his little Chinese curt on the trade routes across the high plateau, conveying the Scriptures trans. by him into the various local dialects. In H.'s early days, Chinese wore pigtails; so he grow his own, and were a simple blue gown. One Mongol servant was his only usual companion, and provided the same meni overy day for 50 years—boiled mutton and rice. day for 50 years—poned mutton and rice.

Robbers were not his only danger, but he was on good terms with camelinen, Qazam fatmers, and Sarter merchants trading in wool, skins, and bricks of tea. Unselhsh and dovoted, he had great in fluence on the wandering folk of Chinese Turkestan. When war came in 1939, his presence on the barder of the Soviet. presence on the border of the Soviet Union aroused the suspicion of the Russian authorities; he was watched, arrested as a 'secret agest', and kept under terrible conditions in a Soviet geol. He was refused a copy of the Bible, but ne was refused a copy of the Bible, but knowing most of it by heart, he recited it aloud. Released and flown back into China proper, where he d, in 1946. See Mildred Cable and Francesca French, George Hunter, Apostle of Turkestan, 1948. Hunter, John (1728-93), Scottish sur-geon and anatomist, b. at Long Calder-

wood, K. Kilbride, Lanarkshire; son of John H., and brother of Wm. H., whom he assisted in dissection in London (1748). He attended Chelsea Hospital under Cheselden, 1750. In 1751 he became pu-pil at St. Bartholomew's. A Muster of Anatomy, Surgeon's Corporation, 1753. Surgeon's pupil, St. George's Hospital, 1751; house-surgeon, 1756. Matriculated,



JOHN HUNTER

St. Mary Hall, Oxford, 1755; but classical studies bored him. In 1761 he took part in an expedition to Belleisle where he studied the conditions of the congulation of the blood), and served with the Brit. army in Portugal in 1762, acquiring knowledge of grushot wounds and inflammation. In 1763 he started a practice in London, but devoted his spare time to dissection and experiment. He became surgeon to St. George's Hospital, 1768; surgeon-extraord, to the king, 1776; deputy-surgeon-general to the Army, 1780. His works include many papers contributed to Photosophical Transactions and A Treatise on the Natural Instance in the Human Peth (1771-1778), On the Digestion of the Slomach after Death (1784), A Treatise on the Veneral Disease (1786), Observations on Certain Parts of the Animal (Economy (1786), A Treatise on the Blood, Inflammation, and Gunshot Wounds (1791), Observations and Reflections on Geology, pub. posthumously. H. made a notable surgical advance in the tying of the artery about the scat of disease in ancursm; indeed, he has been called by some the founder of scientific surgery. He was exceedingly industrious; but he was a poor lecturer, and never had many punils. He was a bigoted Tory in politics, cholerio, and stiff-necked. He died sud-

anatomist, b. in Lanarkshire. He studied at Glasgow, Edinburgh, and St. Georges' licepital, London. He became the leading obstetrician of his time, and was consulted by Charlet and Charlet an mg onscerrcian of his time, and was consulted by Queen Charlotte, to whom he was appointed physician extraordinary in 1764. He was the first prof. of anatomy in the Royal Academy (1768), and president of the Medical Society (1781). His chief work is On the Human Gravid Uterus (1774), at 1 the metastic for which the little of the Medical Society (1781). (1774, Lat.), the material for which took him twenty-rive years to collect. It has been ed. by Baillie (1794) and Rigby (1813). He also pub. Medical Commentaries (1762-64), and important papers on Medical Observations and Inquiries. Hunter, Sir William Wilson (1840-1900), Indian civil servant and historian, was subjected at Clasgow. In 1869 he was

was educated at Glasgow. In 1869 he was appointed by Lord Mayo to organise a statistical survey of the Indian Empire. This work occupied him for twelve years. i This work occupied him for twelve years, the compilation reaching 128 vols., but the whole was condensed into The Imperial Cazetleer of India (9 vols., 1881), his article on 'India' being reissued in 1895 as The Indian Empire: its Peoples, Illistory, and Products. He also pub. a Comparative Dictionary of Non-Aryan Languages of India and High Asia (1868). Hunter see water Horses.

Hunter, see under Horses.
Hunter River, Coquon, or Coal River, riv. of New S. Wales, Australia, which uses in the Liverpool range. Its basin is an immense coal-field, and it flows into the Pacific at Port Hunter after a winding course of 300 m.

the harvest moon, full moon next after the harvest moon, following the Autumn Lauinox. It rises an hr. after sunset during the middle of Oct.

Hunterville, tn. of N. Island, New Zealand, in the prov. of Ranguiker. Pop.

Hunting, see BIG GAME, FOX HUNTING, DI LR STALKING, and SHOOTING.

Huntingdon, mrkt. tn. and municipal bor., and the co. tn. of Huntingdonshire, England, situated on the l. b. of the Ouse, 60 m. N. of London. It owes its early unportance to the crossing of the riv. by Finine Street, which forms the main thoroughfare of the tn. In the tenth cartury the Danes constructed a defensive carthworks, or 'burn' here, remains of which may be sen on Mill Common. I dward the Elder captured the tr. in 921, but it was destroyed by the Danes in 1010. It is now the agree centre of the dist., but the onet. mrkt., held on Saturdays, has decreased greatly in importance. The bor, is governed by a mayor, four aldernen and twelve connellors, and possesses nen and twelve councilors, and possesses a fine but incomplete series of Royal charters from 1204. The seventeenth actury mace has acquired world-wide notoriety from its curious hist.; the silver head was pledged by the almost-bankrupt corporation to Legester in the eighteenth century and a cheap imitation was sub-stituted, which still remains. The leading The leading undustries are a vegetable canning factory cholerle, and stiff-necked. He died sud-denly after a dispute at a board-mooting at St. George's Hospital. Hunter, William (1718-83), dector and

carried on by the successor, of the Ohecker Inn and Malting, headquarters of King Charles in 1645 after he had expelled the Parliamentarians from the tn. In the middle ages there were three monasteries, three hospitals and sixteen par (hurches Only two of the churches have survived All saints dating from the thirteenth to sixteenth centuries, and st. Mary's, twelfth to seventeenth centuries, and 36. Mary's, twelfth to seventeenth centuries. The fine fourteenth century tower partly fell in 1607, destroying the N aisle and aicade, which were rebuilt between 1608 and 1620 Hinchingbrooks, N W of the tn , the seat of the carl of and wich the seat of the carl of and wich stands on the site of a numery, reputed to have been founded by Wm the Conqueror It is a building of various dates from the sixteenth to twentieth conturn but incorporates remains of the cirlici work The gatchous is put cularly inc Cromwell House in the High Street stands on the site of in Augustinian Friary, but is mo its modern. Here was born Oliver Crouwell. The Augustinian Priory (quite distinct from the Friary) was founded in the twelith century. I no modern cemeters 1 of the tn , stands on its site, and found it may of the old build ings are often encountred in digging graves. In the nirrowst part of the High Street, facing the chincol of All Saints church, is the Old Grammar school. Baptist, a twelfth a ntury found the Baptist, a twelfth a ntury found then Here Oliver Cromwell went to school The much restored building is of Norman date and retains a larg. W. doorw is with zig zog on i ment still Blocked arch s once opened into asis and arcther, its blocked, opened into a tiple like modern Grammar School was built in modern Granmar school was built in 1938 and replaced the old r building in the High Street At the school of the High Street is the sit, of the castle now a public open space. The cuthworks constructed in 1068, and amongst the finest of their type, consist of a mott with a bailey partly surrounded by rim parts, and a deep ditch. The Huntingdon to Cambridge railway cuts across the mound, dividing the site into two disconnected parts. Close by is the beautiful medieval bridge of surrocks, built in ful medieval bridge of six niches built in 1332, in the centre of the partnet are slots marking the boundary a parting H from the bor of Godmanchester On the E side of the High Street opposite the entrance to the Castle, is the cighteenth century co gaol, now converted into houses It has some fine buck lungeons in the walling of which are ron staples for confining prisoners. There are many good houses of the seventeenth and eigh teenth centuries, chief of which are Walden teenth centuries, chief of which are Walden House and Ierrar House, both seven teenth century, Whitewell House Cowper House, Monks House and Castle Hill House, all eighteenth century The George Hotel has a seventeenth century galleried courtyard The red brick to hall was built in 1745 by private subscription, and contains some interesting paintings of royalty and local celebrities A feature of the tn. is the extensive commons which almost encircle it and

provide many pleasant walks, they are the property of the Freeman There are also valks dong the banks of the Ouse as far as Hartford Pop 4700

Huntingdon, bot and to sent of II to, Pennsylvania II 5 4, on the R lumata, 1.0 m l of Pittsburgh II is built on ground sloping to the riv, which is used for witer power, and the surrounding country wrich in coal, iron, limestone, and

country is rich in coal, fron, limostone, and fricalsy hie in was named after the counters of H in 1767 Pop 3000.

Huntingdon, Selina Hastings, Counters of (1707 Jl), dughter of Washington Shills see and cull Ferris and nitred in 1728 The ophilus until cull of H, of Donington Park Lee estershire. She was converted to Methodism by her sister in law Leak Merging to Hastings, and hone law Lady Margaret Hastings and hence forth devete I must of her time and onergy to teligion will religious wirk. She be came intimite with George Whitefield and lifer with the Wesleys and was a member of the first Methodist society foundation in 1733. She rectal a hard in Brighto in 1743. and afterw ris at such oth r fashionable resorts Bith and Tunbudge Wells 1 the lop a ratira ting to her conne tion m in rs of the upper (115484 (see OUNII 35 OF HUNTINGDON 4 CONNECTION) In 1 () he rented frese a fferse in \ Wile is it itining institute for members of her relations conviction and subse quently stended her operations to America though sho never visited that continent Selves by J. B. Liggis, 1841 and Sarah Lylter, 1907

Huntingdonians, See COUNTESS OF HUNI NODON & CONNEXION

Huntingdonshire, or Hunts, inland co of lulind an archdescoury in the did by inlitherry of Canterbury The surfice of the comments which is all below 500 from ently writed in the World when sud the ord via form jut of the flit I en dist l he prin rive us the Ouse and the Non chief in la tries are agriculture and graz ing there are no minerals of importance and their in listic, which ire also not very injortine, in lude brick insking pajectitiking, brewing milting leather and it in tunding from a geological point face with the whole consistent of the Cold. Rocks Arm of administrators of the Cold. Rocks Arm of administrators of Olite Ro ky Aren of administrative co 23 h as Pp 6 200 See W M Shi Hunt n t inshire 1920 A Moo Hunt ng inshire and he fordshire, 1939 Hunt nyl mshre and he fordshre, 1939
Huntington, name of sey places in the
U5 \(^1\) (1) the co scat of H (0, Indiana,
on the R Little, 25 m \(^3\) W of bot
Wavne Pop 13,00 (2) City and co
scat of Cabell (0 in the state of W
Virginia, on the 3 bank of the Olio R,
50 m W o' (harleston, Among the
prin buildings are the state asyluin for
incurable lumatics the co hospital, and a
Carnegle library It has car and rallway
waggon repairing shops, machine shops
steel rolling miles Pop 76 000 (3) A
township of Suffolk co, New York, on the
N side of Long Is The S part is occupled in mrkt gardening, but along the
Sound are the vils. of H, Cold Spring Harbour, Centreport, and Northport, where many New York business men have residences.

Huntington, Ellsworth (b. 1876), Amer. geographer; prof. at Yale Univ. since 1910. He accompanied sev. expeditions to Asia, and undertook research into the drying out of the continent. Works include: Patestine, and its Transformation (1911), The Climatic Factor (1914), Works in-(1911), The Climatic Factor (1914), Civilisation and Climate (1915), Red Man's Continent (1919), Earth-Sun (1923), The Character of Races (1924), Qualerrary Climates (1925), The Human Habitat (1928), Weather and Health, 1930.

Huntingtower and Ruthvenfield, united riuning over any neutroniaes, and vils, of Perthshire, Scotland, situated in Tibbermore par. The castle which belonged to the earls of Gowrie, was the scene of the 'Raid of Ruthven' in 1592, when James VI., then a boy, was kidwhen James VI., then a boy, when James vi., then a boy, was kid-napped. There are bleachfields, which were estab. in 1774; these are led with water by a Rom. aqueduct from the little

R. Almond.

Huntly, mrkt. tn. of Aberdeenshire, Scotland, situated at the junction of the Bogie and Deveron, 9 m. S.E. of Keith, and 40 m. N.W. of Aberdeen. The ruins of Huntly, or St. of blogie castle are in the vicinity. If, is a prosperous the, lying in a rich agric, dist., with a trade in farm produce, and manufs, farm implements. Pop. 1200.

Huntsman Process, see under IRON AND

STEEL.

Huntsville, cap. of Madison co., Alabama, U.S.A. Indian corn, cotton, and fruit are cultivated. The Monte Suno health resort is near. Pop. 2000.

Hunyadi Janos, or John Corvinus Hungali (J. 1227 1112)

yadi (c. 1387-1450), emiuent Hungarian soldier, b. at Hunyad in Transylvania. At an early age he entered the service of King Sigismund and distinguished himself in the Hussite wars. After the death of Albert in 1139, he co-operated in the clection of Ladishus III., who made him volvode of Transylvania and captain of the fortress of Belgrade. In subsequent struggles with the Turks he won victories at Szendo (1111), at Szentimne, and the Iron Gates of the Danube (1112), but was defeated in 1444 at Varna, where the king met his death. II. was made governor of the country during the minority of Ladislaus V., but had continually to contend against the jealousy of Gara and the Czillei. In 1453 the king was declared of age, and H. organised a Turkish crusade, during which he won his last victory at Mendor Febara in 1456, dying of plague in the camp three weeks after the battle. He was the first great Hungarian general in a modern sense, as he was the first to depend chicily on strategy and tactics for his victories.

Hunza (also Kanjut) and Nagar, two small states on the N.W. frontier of Kash-Hunza (also Kanjut) and Nagar, two small states on the N.W. frontier of Kashmir. The two states, though peopled by the same Dard race, were always at war, and when the Glight agency was estab. In 174 he was appointed to the see of Lichfield and they turned their attention to the Brit. agent. This led to the Hunza-Nagar expedition (1891) under Col. A. Durand, the storming of Fort Nilt, and the subsequent of Moral and Political Dialogues (1769)

occupation of the two states by Brit. troops.

Huolu, or Huailu, tn. of China, in the prov. of Chili, in 38° N. and 114° 26' E.

prov. of Chili, in 38° N. and 114° 26′ E. It is at the foot of the pass which leads from Chili to Shansi, with which a trade in coal, iron, and pottery is carried on. Huon Gulf, extensive inlet, in the E. of Ger. New Guinea, situated between lat. 6° 45′ and 7° 30′ S.; it possesses sev. fine harbours. In the Second World War, the Jap., having invaded New Guinea early in 1912, held most of the H. G. area by nid-March of that year. Salamana was taken later in 1942 and become Japan's mid-March of that year. Salamana was taken later in 1942 and became Japan's chief centre in the H. G. area. Landings were also effected at Lae, further N. subsequent fighting in the Salamana-Lae area the Jap. lost at least 12,000 men and by 1914 their garrisons had been reduced to impotence. See Jurther under PACIFIC CAMPAIGNS IN SECOND WORLD WAR, and NAVAL OPERATIONS IN SECOND WORLD WAR; also under NEW GUINKA.

Huon of Bordeaux, contral figure or hero of a thirteenth-century Fr. chanson de aeste called after his name. The poem is a mixture of the older historical epic and the later romances, and contains historical and purely legendary matter, the latter being marked by the character of the fairy being marked by the character of the fairy Oberon or Auberon. It was printed in a prose version in 1516, and was trans. Into Eng. by Lord Berners, 1540. See Guissurd and Grandmalson, Ameiens Poetes de la France, 1860; S. Lee ed. of Berners' trans., 1853; and Gaston Paris's ed., 1898. Hupa, or Hoopa, name of an Indian tribe who inhabit the Hoopa valley, was the formula and who formula by the first and in ribe.

California, and who formerly lived in vils. by the Lower Trinity R.

by the Lower Trimey R.
Hupsh. prov. of Central China, bounded
on the N. by Honan, S. by Hunan, E. by
Nganhui, and W. by Shensl and Szechwan.
The main portion of the prov. is a plain
through which flows the Hun R. Aggreuiture is the chief industry, cotton, wheat, rape-seed, tobacco, and heaps being beans being rape-seed, tobacco, and beans being grown; vegetable tallow also forms one of the prin. exports. A small quantity of gold is found in the Han it and some coul is worked. Other minerals found are tron, salt, lime, saltpetre, and sulphur. Trade in opium is largely carried on, the lag riv. ports being the centre of this traffic. The plant is cultivated in the Wingt of the prev. Can Windham. Chief part of the prov. Cap. Wuchang. Chief port, Hankow. The whole of the E. half of the prov. was in effective Jap. occupa-tion from 1941 to 1945. The area is 71.900 sq. m., and the pop. 21,000,000. Hurd, Richard (1720-1808), Eng. divine

and writer, b. at Congreve, Staffordshire. lie was ordained in 1712, and in 1750 was appointed preacher at Whitehall through the influence of his friend Win. Warnels burton. In 1765 he was made preacher at Lincoln's Inn, and two years later archements of Glowerter. In 1771 he can demon at Glowerter. In 1771 he can Letters on (hwalry and homance (1762), Uses of horigm Iravel (1763) Collected Works (8 vols, 1811) See 1 kilvett Memorrs of the Life and Writings of histop Hurd, 1860. Hurdoi, see Hardoi

Hurdwar, see HARDWAR

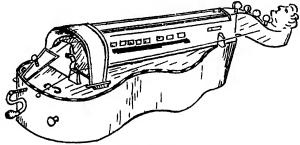
Hurdy-gurdy, musical instrument akin to the organistrum, of which indeed it was a later development. In appear anco it was something between a lute and a guitar Their were four or six strings in all, but only the first, called the chan terelle, was reached by the mivable frets or keys, so that it was possible to play a diatonic needed. The other stilles were tuned as drones and were made to vibrate by the friction of a leather excred and well resined wooden wheel turned by a of the lames R 103 m 1 of Pietre I handle with the right hand. This quaint has a large shipping business fluron instrument was invented by the OF College is situated here. Pop. 10 800

resembled the H G in shape but had pipes like an organ and a device that allowed the wheel to act as both how and bellows Huriford, the of Avrshire, Scotland, situated on the living 2 m 5 of kilmar nock. The manuf of preclay is carried

on and there are coal mines and iron works. Pro 5000

Hurlingham Park, fashionable resort at Huring am Fark, institution of soft in them I ondon The organisation of polo in I ngland dates from its adoption by the Huringham Club in 1973 and the game is still played their In 1867 the fluringham Pigeon shooting Club was formed and the sport was carried on until

formed and the special test suppression in 1006.
Huron city of S. Dakota, U.S.A., co seet of Beidle co. It stands on the b.



HURDY GURDY

school (thirtcenth century) when it was developing polyphony over a redal base It was known in Irane as the right rose Tuned to the chords of (or to major, the H G could support the singing voice or make music by itself lacourse of time the H G acquired a riput tion for rustify Other countries called it the German lyre, though the Gers did not rate it highly and its only place in society was at the Fr court, where it still flour ished in the eighteenth century Michael Methods existed for its study and sometas for our or two H Gs were composed by Iully and other composers, while the popularity of mak instictly at the court if versailles in the time of Marie Antonnitte gave rise to the tie champeire orchestra which in cluded the H (r, bagpipes flutes, recorders and oboos Lavishly ornamented and jewelled instruments were made some of which are to be seen today in museums The wells a rous continued to appear intermittently during the minetenth century, thus it was employed in Donizetti epera Linda di Chamouna (1942) to give local colour for two arias In 1949 Mr John Christic, founder of Clyndebourne Opera, played on the H. G a divertimento by Haydn, adapted from one of sev con certos which the composer wrote for the King of Naples in 1786 This monarch performed on the lyra organizzata, which

Huron, Lake, in point of siz (23 200 sq. m) the second of the live Great Lakes between (anida and the U > A in \ Ameria It is bounded by Ontario except on the W and \ W where it adjoins Michigan Grand Manitoulin Is one of three thousand and the pennsula of Cabots Head divide the like into two un equal sections the N consisting of N Channel and Georgian Bay. At the N Channel and Georgian Bas of the act Mires Recarded dwn water from Lake Superior which is 20 ft higher, whilst at the Steel to the Steel and Red discharges into Iake I tie which is 1 ft lower, on the SW the strate of Mackinga makes a connection with Lake Michigan ton with Lake the hand to have the sea, and touches a depth of 802 ft. It is subject to violent storms, and is rich in sal mon trout etc. I be lake was discovered in It1, by Champlain and Father Le Curn who rewhed it from the Ottawa R. Champlain named it I a Mer Douce, ac fresh water sea it was subsequently called Lac d Orleans but eventually, on account of the estab of the Huran missions, re-ceived the name Lac des Hurans or Huran Lake I or long the N channel of the lake continued to be a highway for the fur trade (see HUDSON'S BAY COMPANY) For many years the lake has been a centre of iumbering operations. See E. P. Morton, Lake Huron and the Country of the Algon-

which belong to the pie Cambilan group They consist of more or less metamor phosed sedimentary 100 ks, and, in Canada especially, viluable deposits of most of the important metals are found therein Generally speaking, the H rocks compuse quartate, slate, limestone, and other ig neous rocks. They are well developed in certain regions of Michigan, Wisconsin and Minnesot 1-the list named having

valuable from ores

valuable from oros

Hurons (Ir huré, bristled, used as a
word of contempt in the sense of lout)
Applied by the Fr in Canada to the
Indian tribes occupying a part of the
country in Ontario which was called
Huronia Huronia lay 5 of Georgia
Bay, it comprised a stretch of country
about 10 m long bounded on the W by
Nottawa-aga Bay and on the 1 by Lake
Simcor The tribe's were of fromnous The tribes were of Iroquoian Simcoc descent, and formed a confederacy called Wendst (islanders), corrupted by the Eng into Wyandot (g :) The name is still found in the Hurons of Lorette in Quebcc, and in t great Lake Huron Carter in his vocage to Canada, 1 of 1 is supposed to have nict Huron Indians on the banks of the St. Lawrence but if on the banks of the St. Lawrence but It so, they must hive been deriven out of the riv valley when Champlain came upon them early in the seventeenth century. They seem to hive numbered between 20 000 and 50 000. Champlain made friends with them by mutual trading and played them off as allies against the common for, the Irogun It was near what is now the vil of Hawkestown on the W shore of lake Sincos that Champlan joined a band of Huron wartins and set out to night the Iroquois during the time when he discovered Lake Outsilo (96 also under Hiroson's Bay Comins) The Ir Jesnits (stab then first mission in Huroma in 1(20 and their ministrations served to check the bellicose zeal of the H When however the Iroquois with the aid of arms bought from the Dutch in New York distroyed the vils of Huronia (1619) the Hailed some to neighbouring noutral tribes, others to Quebec, where to day their descendants are to be found in Loretto The H represented a high state of Indian civilisation and were good agriculturists as well is fishermen but like other Indian tribes, they imposed the dradgery of life on their women folk. Gov was vested in the tribal chief and there was a well developed system of law See E. I Hathaway, The story of the Hurons (Toronto), 1915 Hurricane, wind storm The word was

borrowed in the fifteenth century by the Portuguese navigators from the Caub Portuguese navigators from the Cauth beans, who destribed such a phenomenously the word 'hurscan H has the technical meaning of wind speed more than 72 mp h (Heaufort force 12), but is popularly used of any violent tempest, though, of course, it primarily referred to the sudden storms to which the W Indies are subject. Thus tormadoes, cyclones, and

quins, 1913, P. C. Day, Pransportation on the Great Lakes (U.5 War Dept.), 1936, He are whirling storms, the diameter of the Great Lakes, 1944.

Huroman, name of a class of rocks as 300 m. They usually travel in a as 300 in They usually travel in a westerly direction from the equatorial belt of calms where they form, then mostly curve away from the equator and event ually move in an easterly direction to temperate late At first, Hs usually tranclat shout to mp h, but when begin must be move to the k they often attract cold r an and change into the larger trontal depressions, common to temperate and polar late, which move much faster. The winds blow spirally inward with a tiemendous velocity, often teaching 72 mph and even over 100 mph. As in all low pressure systems the direction of these inward blowing air criticals is counter clockwise in the N and in the opto its direction in the S hemisphere. The centre of the swir! is also the centre of lowest pressure and is called the eye of the storm as the eye is reached the winds drop suddenly, the torrential run stors the louds often break leaving blue sky in only high clouds, and the sex wave sky nonivinga cloud, and the sel wave become confused and pyramidal bortu-rately rethaps, they form mostly on the sea where they are a great source of dan it oships, but if they pass over an inhibited is they scatter the most minibited is they scatter the most wint in destruction in their path, and even if they do not strike an is, they often exist great dimage by hexving up high wives ignise the continental shores typhoens is the specific name for similar win I storms in Oriental seas. See (AC ONL and JORNADO

Hurnerne, single stat low wing canti-lever monopline. It was designed by Sydney Cimm an employee of the H G Hawker Lugincering Company which in 1335 changed its name to Hawker Air rat 1 td and later to the Hawker Sid dely Ancieff to Ltd It its early days while it was still on the drawing board the Il was known to the Hawker (o) is the I my monoplane and was designed for the (() hp Rolls Pov (Casha v steam coled motor but in 194 this vator was dragged for the Rolls haver Me in II, a 12 cylinder liquid cooled engine giving h p at 1,000 ft. This was the engine und in the H. Muk. I. she first II, thown by Grorge Bullium on Nov 6, 1931, with first long nighter that had a re tri tible undercarring and an enclosed ce kpit, or conservatory know that time the H was after divery little in essen From that til the only import at alteration being instead of have if a tabric covering, thi the wings were all rectal with a stress skin. The standard its weight of the H. wi then 6,600 lb bu for special purposes it could fly at more than 7,000 lb. In its crainal design the H was to be armed with I machine guns all inside the fuseand all firing through the airserew disk by means of in crrupter gear, but sub-equently it was litted with 8 guns in a now outside the arrows, where they could fire at their own limit of speed without reference to the argine. The H was put into production only in 1935 and the first machine off the production line was flown in Oct. 1937. Later, the 8 Browning guns were fitted, 4 in each wing and on each side of the fuselage, firing outside the disk swept by the airscrew. After its carly trials, the tail-wheel was made nonretractable and, with a two-blade, fixedpitch wooden air-crew, the top speed was 330 m.p.h. at 17,000 ft. With metal wings and Rotol constant-speed airscrew, the top speed was 335 m p h, at 17,500 ft. This was the stage of development made known just before the outbreak of the Second World War; but even then, by improvements and refinements, the actual speed of the H. was far beyond these figures. The H., together with the Spither (q.v.) was used against the Gers, at the Battle of Britain (q.v.) with annihilating

Hurst Castle, par. and castle of Hampshire, England, situated about 4 m S W of Lymington. The castle was erected by Henry Vill. for the purpose of defending the Solent. Charles I was imprisoned here (1648). It is a fortress and look out station. At the rear of the point of fortifications are two lighthouses with occult-

ing and fixed lights.

Hurst, Fannie (Mrs. J. S. Danielson), Amer. writer, b at St. Louis, Missouri, 1889. Educated at Washington and Columbia Univs. She became one of the Columbia Univs. She became one of the highest-paid magazine writers in the U.S.A. She has also written novely, somewhat marrid by an affected style. President, Authors Guild of America, 1936-37, Vice-President, Authors League of America, 1944-42, Chairman, Women's National Housing Committee, 1936 1937; Member of National Advisory Committee to the Work Projects Administration 1940-11. istration, 1940-41. Among her best books are Gaslight Sonatas (1913), nooks are clastign Sonatas (1914). Humoresque (1919), Stardust (1921), Lummos (1923), Five and Fen (1929), Instation of Life (1933), Antira's Dance (1931), Freal Laughter (1936), Lonely Parate (1942), Hallelujah (1941), The Hands of Veronica (1945), We are Len (short stories, 1947) 1937).

Hurstmonceaux (Herstmonceaux), vil. of Sussey, in the Eastbourne parl, div. 9 m. from Eastbourne The name is derived from Waleran de Monceux, who was lord of the manor in the eleventh century. There is an interesting and exceptionally well-preserved castle in the exceptionally well-preserved castle in the vil H. castle was built by Sir Roger do Fienes, treasurer to the Household of Henry VI It was he who obtained a heence in 1441 to enclose, tenellate, and furnish with towers and battlements his mand of H. There are no brick buildings 5. of the Phames earlier in date than the castle, which is probably not only the best of the carly brick buildings of England but the most beautiful of Eng baronal buildings. The mouldings and dressed work are mostly executed in greensand work are mostly executed in greenand stone which permits of sharpiness of detail. After 1740 the castle fell into neglect and in 1777 the interior, including the buildings in the court within the main rectangular structure, were demolished and the materials used to build the mansion

of the old fabric beyond the outer walls, with their towers, and portions of the inner walls. In 1911 the castle was pur-chased by Col. Claude Lowther, who began the work of restoration. After his death it was acquired in 1932 by Sir Paul Latham, who completed the restoration (a description of the situation of the castle will be found in Francis Grose's Anti-quities of England and Wales, written in the cighteenth century; see also article by Sir Harold Spencer Jones, Astronomer Royal, in Vature, July 20, 1940). Exten-sive search has been made for a new site for an observatory; putity of atmosphere being an essential, the removal of the observatory from Greenwich had to be faced. H. castle was selected by the Admiralty and along with the castle some 170 ac of ground were acquired for the erection of the instrumental equipment and also as a safeguard against encroachment too near the observatory of other buildings

Hurstpierpoint, par. and tn. of Sussex, England, 8 m N. of Brighton, and 2 m. from Hassocks (its station on the S. Region railway). Holy Trinity Church is a une modern building. Here is st John's Col-lege, a public school for boys Pop. 3000.

Hurtado de Mendoza, Diego (1503-75), Sp. diplomatist, poet, and historian, b. at Granada, and educated at the univ. of Salamanca, also attended lectures at Bologna, Padua, and Itome whilst serving under Charles V. He was sent as ambassador to England in 1,38, to Venice in the following year, acted for some time as military governor of Siona, and repre-ented the diplomatic interest of Spain at the Council of Front. From 1547 to 1554 he was special plempotentiary at Rome; being obliged in 1508 to leave the Court on account of a quarrel with Philip II., he settled at Granada and devoted himself to the study of Arabic poetry and to the production of his best work, the Guerra de Granala a hist of the revolt of the Moors of Alpuanas under Philip II. This hist., although written in 1972, was not pub. until 1627. His talents as a poet were of no mean order, and he popularised the classical It, hendousyllables. He is generally allowed to be the author of that great pre mesque novel Laurellode Tormes See A Senin y Alonsa Diego Hurtado de Mendosa apuntes biografuo criticos, 1886; and monograph by A. G. Palencia and E Mele, 1912-13.

Husband and Wife. The consideration of the essentials to a validly colebrated marriage, and the various recognised forms, past and present, of the ceremony or contract of marriage itself, are not dealt with in this article, and will be found dealt with under MARRIAGE, and the subject of the dissolution of marriage will be found under Alimovy. Divorce, Judicial Sharario, and Marriage. This article is restricted to the rights and After 1710 the castle fell into neglect and in 1777 the interior, including the buildings in the court within the main rectangular structure, were demolished and the materials used to build the mansion now known as H. Place. Little survived the opposite extreme, allowed the relationship of husband and wife to be contracted and dissolved by the slenderest forms, and left the parties all but inde-pendent of each other. This evolution has found its parallel in the social systems of many modern states, both as regards the personal freedom of the wife and the immunity of her separate property from

Theoretically each spouse has a legal right to the soriety and presence (con sortum) of the other, but in Ing I we neither the petition for restriction of con production for a sortum with the control of the soriety and present a sortum and the state of the sortum and the sort jugal rights nor any other proceeding will avail to inforce that right. A husband has no legal light to restrain his wife from laxing him, and will even be ordered by the court to abstain from molesting her if she choose to stry away Indeed, any physical compulsion put upon a wife is illegal, and in many cases would amount to cruelty so us to found a chilm for pudicial separation (q t). On the other hand, if a wife choose to leave her history at their terms of the control of the co band without idequate cause, he is en-titled to refuse to admit her into his ho ne again, and the converse probably also applies. The suit for restitution of on jugal rights is in the free than a formal condition presearch to the subsequent formulation of a charge of desertion. The practical value of consortium lies in the right of the husband to bring an action of damages against a third party who has conticed away his wife, though the archains of the law still survive in the denial to a wife of a corresponding action remark to a wire of a corresponding action. The action of term con (criminal conversation), as it was called, for durings in trespast against a min who his committed adultery with the plaintiff's wife was abolished on the estab of the Divorce Court in 1857, and probably damages can relative the planting of the conversation of the property of the conversation of th only be obtained against an idulterer by olting him as co respondent in a divorce petition, for it seems to be the better opinion that even the above noticed action for enticing away is competent only to the case of one who is deprived of the services of his employees (se further on this, Jenks, Husband and Wife in the Lau, 1909 and Pollock, On Iorts) But each spouse may sue for dumages for the loss of the 'comfort and sourty' of the other spouse where the latter has been physic ally injured by the negligence or inten tional wrongdoing of a third party. By a legal anomaly, however, the claim for damages when death results is restricted to the actual pecunitry ioss sustained By the old common law the fither as

the legal guardian by nature and uniture has the complete control over the person the education, and religious upbringing of his children during his lifetime, but covenants in separation deeds not to in sist on the custody of children will bar the right, as will an order of the Divorce Court with respect to the custody of children. But either parent convicted of crueity to a child under sixteen may be

common law, and one eminently in accord ance with foudal principles, was that H. and W were one in the eye of the law. But this unity on its proprietary side was I he wife's freeholds became vested in the husband and herself jointly during cover ture (q v.) but the husband had the sole management and took the rents and promanagement and took the rems and pro-fits, while if the wife prodecased him, he had a life estate in the wife's treeholds called a tenney by curtesy (see under CURI'SY) Luthor the wife's personal projectly, comprising lessoholds, and choses in when reduced into posses sien (se under (HOSF IN ACHON), passed to the husband on mutuage or became his if it what subsequently acquired by the wil I is t equity (q r) and then statute in encrosched upon and finally whitled away practically all these marital rights I not medical the common law by the doctrine of the 'separate uso,' by which my projectly expressly given to the wife belor or intermittings,' for her separate use visited from the husband's control subject to the lines and scalain to any part of it in hipsest of by her death and by the restaint or anticipation, which, where it is hed to a gift of property to her che tally kept that property fice from her rish and a persuasive influence, so far as presented in come was due, by the simple fact that she herself could not antipite it. The Married Women's Property Act, 1883, effected a radical change in the wife's propretary position, then the old law, as modified by equity and statute law prior to 1882 still applies to women married before Jan 1, 1883 In Act of 1882 made a marriel woman to enter into contracts as a feme that Act her contracts bound her separate estate so far as not restrained from anticit it in and, generally spriking, the Act put a married wo man in the same cu ati m po itim as an unmairied withan with respect to all her property. But the his bind still had the right to her property by sirvivorship if she died intestate (see further under of ((1000), ININSTATE) I urther, the Act applied to all women marined before Jan 1 1003, s regards all pr perly acquired by them since that date in ict passed in 1355 makes notable changes in the law relating to the capacity it perty, and habilities of married women smiler to that of the single woman, so that she is now able to hold and to dispose that she is now able to note and to dispose of any kind of property, render herself, and be rendered, had in respect of any contract debt, or tort (see TORT), sue and be sied in contract or tort, and be subtto the law of tankrupty and to the conforcement of judgments and orders, in all respects as if she were a single woman. pussing of 'a Att was the separate property of a married woman or held for hat soparate use in equity, or belonged to hat at the date of har marriage or, after the Act, has been acquired by her or devolves upon her, belongs to her in all deprived of the custody of it.

has at the date of his marriage or, after the Act, has been acquired by her or another's property, and obligations arising devolves upon her, belongs to her in all from marriage.—The anot. maxim of the respects as if she were a single woman and may be disposed of by her accordingly. The Act also abolished the restraint on anticipation (see supra) as to instruments effected after Jan. 1, 1936. Notwith-standing the existence of a clause re-straining the wife from anticipation, the court may, under the Conveyancing Act, 1931, bind her interest for her benefit and with her consert and in our with her consent, and in any case the clause will not save her property from hability for her ante-nupital debts, except to the extent of any part of her property that had not actually reached her hands when the debt was incurred. With this enfranchisement of the wife's property there have been corresponding augmentations of such rights as she had in the property of her husband. At common law a widow was entitled to a dower or a life income of one-third of her husband's freeholds of inheritance, whether he had disposed of them prior to his death or not; but as this right was illusory by reason of the conveyancing device known as 'uses the conveyancing device known as uses to bar dower, equity gave her a right to dower out of her husband's equitable estates of freshold so far as not disposed of by him. The wife is still legally entitled to dower, but in practice settlements usually contain declarations against dower (Jointure (q.v.) also hars dower.) But, on the other hand, a write now has stronger claims on her hu-band's personalty, assuming he dies intestate (see Distribu-rions, Statutes of). There is nothing to prevent the husband, any more than the wife, from willing away the whole of his personalty from his wife.

Husband's generally make their wives a periodical allowance for housekeeping. Strictly the wite can be called upon to account for every penny of this. If she saves any of it, the balance belongs to her husband, and if she invests such savings or puts them into her banking account the husband can get an order of the court the husband can get an order of the court summarily transferring such investment or savings into his own account, though if the wife disputes his title, he must prove that he had no intention of giving her any surplus. Each spouse can suo the other and bring crimmal proceedings against the other for the protection of his or her separate property. But a married woman may not proceed criminally against her husband while they are living together, nor after they are separated, as to wrongs to her property committed before separation, except in respect of property wrongfully taken by the husband

on leaving or deserting her.

It is a dogma of king, law that the husband has the right to choose the house, and it the house is in his name, it follows, and it the house is in his name, it follows, not from the matrimonial relationship, but as an ordinary result of the law of contract, that the husband has the right to allocate the rooms for various purposes, and contract the rooms for various purposes. and, generally speaking, regulate the domestic arrangements. If, of course, the wife leased or bought the house, or if

such illegitimate or other children as the wife may have had in marriage). But apart from payments ordered by a magistrate to be made for the support of a deserted wife on a separation order, the only means of enforcing the undertaking to maintain is through the Poor Law Authority, if and when the children or Authority, it and when the children or wife become chargeable to par relief. But the wife may pledge her husband's credit for necessaries for herself and the children, even where she has separate property of her own. The wife's liability for maintenance apparently only arises on the entire failure of the husband. But the law is by no means clear as to the exact circum-stances when the wife's property can be resorted to for this purpose. Apart from the purchase of necessaries, the wife has no right to pledge her husband's credit, and it is unwise for trade-men to assume and it is unwise for transmen to assume that she has, for the reason that the hus-band can rebut the presumption that he has authorised his wife to pledge his credit, by proving either that he has expressly or impliedly forbidden her to do expressly or implicitly torbidden her to do so, or that he makes her a sufficient allow-ance. If the husband by paying bills leads a particular trade-man to holley his wife has authority, he must give the trade-man express notice that he gives no turther authorisation, if he desires to prevent the wife from further pledging his credit with that tradesmon. The mere fact that a tradesmon enters purchases in the wife's name and that she invariably pays with her own cheques, and that the trade-man did not know she was a married woman, will not make her separate property liable if, in fact, she did not contract otherwise than as her husband's agent (Pagun v. Betweek, 1906, A. C. 118)

Before the Act of 1935, the husband was Bi fore the Act of 1935, the husband was lable for the wife's ante-nuptial debts to the extent of any property he may have acquired through her, but the new Act abolishes his liability for his wife's antenuptial debts and obligations. The Act, however, makes no change in the law regarding the husband's habilities for his wife's necessaries. For his wife's antenuptial civil wrongs the husband's liability is similarly postreted, but he least bility is similarly restricted, but he is liable without limitation jointly with the wife for civil wrongs (torte) committed by her during marriage, provided the parties were cohabiling at the time. But the wife incurs no liability in respect of the husband's debts or civil wrongs. As to the pre-unnition that a married woman's crimes are presumed to have been committed under the coercion of her husband, and as to the criminal liability generally of married women, see under CRIMINAL LAW. Neither spouse can give evidence against the other when the latter is charged with a criminal offence; but by the Criminal Evidence Act, 1898, such spouse can give evidence on behalf of the the wife leased or bought the house, or if it stands in her name, she can legally excitude the husband from entering it.

Each spouse is assumed to have undertaken the maintenance of the other and of the children of the marriage (including the absence of fraud a policy taken out

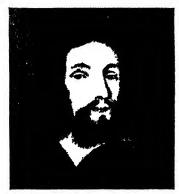
by the husband and expressed to be for the benefit of his wife or children or both can never be touched by his creditors A busband is liable for his wife's income tax, and apparently if the refuses to pay and he cannot, he can be kept in prison until she does pay. An important change was introduced by the Administration of Estates. Act. 1925, which affected the rights of a wife in her husband's property Down (or the right of a widow to a life estate in critain lands of the husband) was practically abolished. On the death was practically aboushed. On the death of an intestate husband the wafe takes (1) all personal chattels absolutely, (4) furniture, plate, pictures, household effects, etc. (2) £1000 free of death duties with interest at 5 per cent from date of death. (3) the income of the whole residue for life of the hu-band le vecs no issue, and of half the residue if he leaves. The life interest may be capitalised should this be desired in order that the residue may be freed for immediate distribution to other beneficiaries.

The Scots law of husband and wife is not now markedly dissimilar to the Eng, since the passing of the Married Women s Property ("cotland) Act, 1881. But the Act of 1932 (noted shove) does not apply to Se other 1 or N "reland). The wife has a se parate estate in her movables, and But the The wife property belong to her Parties inarried before the Act can come under its opera tion by mutual deed and in any case come under the Act unless the husband before marriage has by irrevocable deed made reasonable provision for his wife in the event of her surviving him. The wife is not entitled to assign her prospective income from more thick or dispose of her morphies without her husband's consent. The husband has a right of succession to his wife a morphica if she die intestate. The widow is entitled to a life rent of one third of her husband's estate and one half or one third of the movable c-tate (one half it he wire without issue, one third if he lett issue) See & Jenks, Husband and Wife in the Iau, 1909 Lush, Iau of Husband and Wife Pollock, On Toris

Husband and B ife Polices, On Three Husi, Hushi, or Husch, in of Moldavia, Rumania, situated 9 m W of the Moldavia, SAR border Wine is largely produced and there is a neted yearly fair The treaty of Pruth between Turkey and Progress was here signed in 1711. Pop

16,700 Huskisson, William (1770-1830) Brit state-man, after a preliminary grounding in aftairs as private secretary to Lord Gower, the Brit ambas at Paris, and then as secretary to the Admiralty, took his seat in Purliament in 1796 From 1804 he held various minor offices, and in 1927 became colonial secretary and leader of the House of Commons under Goderich, and retained these positions under Wel lington, with whom, however, he presently disagreed, and from whose ininistry he then rotired. He was run over by an engine at the opening of the Manchester and Liverpool Railway on Sept 15, 1830, and died on the same day See life by J. Wright, 1831.

Huss (or Hus), John (c. 1373-1415), Bohemian religious reformer, b. at Husi nic in Bohemia Hus was the name which he adopted himself about 1396 as before then he was known as Johann Hussinees, or de Hussynees. He was educated at an element are school and the univ of Prigne, where he became B A in 1393 Bach for of Theology in 1394 and M 1 in 1396 In 1400 he was ord fined and in 1102 was in the rector of the univ of Prient. The pro Wychffe sentiments of H graduilly made him suspected of her's and his protest against the burn my of Wychffe's books by the archieshop of Pregue in 1410 caused his excommunication. His support of the king in his policy towards the papal schism made him point towards the papal senism made him execct in rls popular, and although in 1411 the whele city of I lague was laid under an interdict II still preached and carried on his duties is usual. In the following year, he were, he was obliged to quit Priene, and whilst in seclusion he wrote his D. I clessa, his greatest work. In 1414 he was summoned to attend the



JOHN HUSS

council at Constance between King Signs mind and Pope John NIII, and was in title a 'safe conduct by the former Neutheless he was in Troned soon after the council in 111, was ordered to recent ill his doctrines with were held to be far that the council in 112, was ordered to recent ill his doctrines with were held to be far tred. On his refusal he was condeuned to the stake and met a marter? de ath with exemplary fortitude on July 6 Il was a scholar of deep studition, as is preved by his Super IV Sententiarum, but he is chiefly remukable for the inspiration he gave to the cause of Boheman intronalism. His wile may be divided into four classes.

1) Hogmatical and ntto tour classes | Dogmatical and polemical, (3) executives (4) epistolary. See also Hussires, Wars or The See V Flajshams (ed.) Joannes Hus Opera Omna, 1904 See also W. Berger, Joannes Hus und König Signsmund, 1871 Count F Lützow, Life and I imes of Master John Huss, 1909 J Herbon, Huss and his I ollowers, 1926 E Denis Huss et la guerre des Hussites, 1930.

Hussars, originally the name of the Hungarian cavalry raised by Matthias I in 1458 The word is derived from the Hungarian hus meaning twenty, as every twentieth house had to furnish a man for the corps I he term was applied to light cavalry whose duties were mainly counting, reconnaissance, and roving commissions. Speed being in essential feature in their employment, they had to travel light a factor which also governed the distance they could cover in a given The success of this arm in the time Hungarian service caused it to be adopted in most Furopean armies and in the Brit service some Light Diagoon regiments were converted into H at the beginning of the uneteenth century. The distinc-tive features of the dress of H are the busby ribbed short jacket nd pelisse (or banging jacket) worn over the left shoulder In the process of time the tactical employment of the various kinds of cavalry has occome united and no distinction i now made. Up to 1922 the H regiments in the line service were the 3rd 4th 7th 8th 16th 1th 1th 1th 15th, 18th 19th in 20th but in that year, on the reduction of the cavalry estab, the following pairs of regiments were anialgam sted to firm one regiments were anialgam sted to firm one regiment each—13th 18th 14th 20th and 1 th—13th 1n 1928 the 11th was converted into a cival view arministed car regiment live years later the 1 th 19th were ledesignated the 1 th king's Royal Hussian Under the subsequent Army reorganisation into to 6 the remaining of cavalry has occome unified and no dis reorganisation ino t of the remaining Hussai regiments were converted into inght tank units or an our converted more inght tank units or an our car companies. The roll of battle handurs of the Hight regiments (or their predecessity the Light Dragoons), commence with Dettingen (1743) and they have talen a conspicuous part in all compaigns sin c that date During the Peninsular Cu a ugn the 1 th gained particular distint on in actions at Sahagan and Benevent De 21 1808) panagan and selected in 21 1808) when they routed a fur a period of fr cavalry 'W uterly is also on their roll, also the victories in the frings the ith formed part of the light Brigade at Balas lay 1. The type of lighting in the Safria an War, 1899 1902 was poou harly suited to civalry a tim and the Head their full show of a time. had their full share of a tions. During the early stages of the Lust World Wai the early stages of the first World Walthey were employed as cavalry but with the development of trench warfare they fought in I rance and I landers in a dismounted capacity. The 7th and 13th were sent to Mesopot and where they did effective work as cavality.

effective work as cavality in the second World War units of the Hori (hurch I he latter party but was totally defeated by the Utra-Royal Irish H. 11th H. 13th 18th Royal H. 15th 19th The King's Royal Irish H. 11th H. 13th 18th Royal H. 15th 19th The King's Royal H. and the 23rd H. With the Fighth Army in Italy were the 3rd The king's Own H., prohibited in 1520 For a later development of the Taborites, see Bohrman

Hussein (Husein) ibn 'Ali (1853 or 1854-1931), sometime king of the Hejaz, b at Mecca, son of the Amir 'Ali ibn Muhamed, succeeded his uncle the Amir Abdullah as Grand Sherif of Mecca, 1909 He was an opponent of Turkish influence, and sided with the Brit in the First World War after having espoused the opposite cause for a short period, proclaimed him of king, 1916, and aspired to the position of king of pan Arabia, thereby incurring the hostility of 1bn Sa'nd He sent a representative to the Peac Conference, 1919 But, as he refused to be bound 1; the freatics there made he got into difficulties with neighbouring states. In 1921, on the deposition of the Ottoman (aliph by the Turkish in und National Assembly H was offered and accepted the vacint Caliphate but was unable to totain it in the face of internal faction. In the same year he abdicated in favour of his son All after being defeated by Ibn Sa ud (q 2) and retired to Akaba whence he was removed to Cyprus. There he spent five years of exile only retiring in 130 to Amman the cap of his son Ab fullah the enur (now king) of Irans jordan where he died. See further under Arabia. He 147 See M Bouch, Vom 11 Intrium 1938.

Hussein, Kamil (1883 1917) sultan of feact who on the dooth of the bleddee.

Hussein, Kamil (1883 1917) sultan of fgylt who on the death of the khedive, Ablas Hilmi in 1914 was proclaimed sult in an item dued at the head of affairs till his de ath

Hussies War of the name given to the struck it letwen the Bohemian followers of Huss (q t) and king signan ind which began in 1419. Pepular feeling was strined up by the news of the marty release and Meravit sent the probability of the marty released in the structure of the contemptuous attitud of signanual who declared that he would drown all Wy hillies and Hus ites finally brought on the war Tiellussites were victorious at Ziskaberg, as it afterwards came to be called from Zis (p), the header and so alled from the warf sources. After These magnetic is with success After These magnetic is made the moder at party of the flussites gimed their ends. There were, heaver two opposing parties in the Hussite movement, the I requisites and the Faborites. The former, who were it o known as Callatenes (I at caliz, heaven one advanced in their was and receted most of the ceremonal of the Rom Church. The letter party refused to a cept the compact of Prague, but was totally defeated by the Utraquist excels was that of the estab Church of Boh mila, until all non-Rom creeds were prohibited in 1620. For a later develop-

BRETHREN. See L. Krummell, Utraquisten und Taboriten, 1871; E. Denis, Huss et lu guerre des Hussites, 1878; II. Toman, Hussike Velecnictor, 1878; and Countoss Lützow, The Hussite Wars, etc. Husum, tn. of Schleswig-Holstein. Germany, situated on the Husumer Au, about 3 m. from the N. Sca. Pop. 10,000. Hutcheson, Francis (1694-1747), Irish philosopher, b. at Drumalig, co. Down, and educated at Glasgow, where he studied philosophy, classics, literature, and theology. On leaving Glasgow he was ordained and was on the point of accepting a Presbyterian ministry when he was rea Presbyterian ministry when he was perstudded to start a private academy in Duhlin. While employed here, he pub-an Inquiry into the Original of our Ideas of Beauty and Virtue (1725), followed by an Essay on the Passions and Affections (1728). These writings probably led to his election to the chair of moral philosophy at Glasgow in 1729, where he spent the remainder of his life lecturing oh a variety of subjects. It's ethical writings constitute his chief claim to fame, and the best account of his teaching is in T. Fowler's Shoftebury and Hutcheson, 1882. His greatest work is A System of N on Pillosophy (1755). He adopted Lord Shartesbury's view in

the modern school. See lives by W. Scott, 1900; and C. de W. Thorpe, 1935. Hutchinson, city of Kansas, U.S.A., in Reno co. It is situated on the R. Arkansas, and has salt works, sugar factories, and ment-packing works. It is a distributing centre and has a large export trade in grain, flour dairy products, etc. The Kan-as State Fair is held here. It is served by three railways. The state in-dustrial Reformatory is situated here. The State in-

this direction, and exercised a great in-fluence upon the Scottish philosophy of

Pop. 27.000.

Hutchinson, Anne (c. 1590-1643), Amer. religious enthusiast, daughter of a Lincolnshire clergyman named Marbury. She married in 1631 and emigrated to Boston. Massachusetts, where she lectured, and was a follower and admirer of the Rev. John Cotton. She denounced the Massachusetts clergy, and was tried for heresy and sedition, and banished. She then estab, a settlement on Rhode is., and set up a democracy (1638). Four years later. after the death of her husband, she settled on Long 1s. Sound in what is now New York State, and was killed in an Indian rising. A. II. and her followers were known as Antinomians, a name first used by Luther for the followers of John Agricola (see ANTINOMIANISM). See C. F. Adams, Antinomianism in the Colony of Massarhuseits Bay, 1894. Hutchinson, Arthur Stuart Menteth (b.

Hutchinson, Arthur Stuart Menteth (b. 1879), Eng. novelist; son of Lt.-Gen.
H. D. Hutchinson. He pub. three novels
—Once Aboard the Lupper (1908), The Happy Warrior (1912), and The Clean Heart (1914)—before his spectacularly successful best-seller If Winter Comes (title a quotation from Shelley, 1921). It is the garrulously story of a chronically-unfortunate person, Mark Sabre, who has the First World War to assist his was transferred to the W. Front, and

UtraDenis, brought into some of his later works—
\$\foat{s}\$; and \$\frac{1}{3}\$; which include: This Freedom (1922), The \$\frac{1}{3}\$; and \$\fra

Hutchinson, John (1615-64), Eng. Puritan statesman, b. at Nottingham. Educated at Nottingham and Lincoln free schools and later at Peterhouse, Cambridge. He entered Lincoln's Jun in 1637 to study law, but devoted himself rather to music and divinity. In 1643 he entered the Parliamentarian army with the rank of lieutenant-colonel, and was appointed governor of Nottingham castle and tn. In 1616 he was returned to Parliament as member for Nottinghamshire. Ho was elected member for the first two councils-of state of the Commonwealth, but with the expulsion of the Long Parliament in 1653, retired into private life. After the Restoration he was falsely accused of frea-onable conspiracy and confined to the Tower and Sandown Castle from 1662

till 1661, dying at the latter place. Hutchinson, John (1674-1737), Eng. theological writer, b. at Spennithorne, York-lare. He first served as steward to York-lare. He first served as steward to the duke of Somerset, and other families of position, but ultimately devoted him-self to religious studies. In 1724 he pub. Moses Principia (Part I.), followed in 1727 by Part II., and by many other works, including: Moses Sine Principia (1721), Power Essential and Mechanical, clory or Gravity, The Religion of Salan, etc. According to H., the Bible contained the elements of all rational philosophy as

well as of true religion. See life by Spearman in H.'s If orks, 1748-65.
Hutchinson, John (1832-1910), Scottish sculptor, b in Edinburgh. He became an academician in 1867. His prin, work consists of statues of Robert Bruce, John Kinn, Owen Victoria, the Brigger Corporate Knox, Queen Victoria, the Prince Consort,

Hutchinson, Sir Jonathan (1828-1913), Eng. surgeon, b. at Selby, Yorkshire, where he was educated, and afterwards entered St. Bartholomew's Hospital. In 1881 he was elected a member of the Royal Commission on Smallpox Hospitals, and m 1890-96 was on the Vaccination Com-mittee. In 1889 he was president of the Royal College of Surgeons. Amongst his pubs. are: Rare Diseases of the Skin (1860) A Clinical Memoir on Certain Instascs of the Eye and Ear consequent on inherited Syphilis (1863). Illustrations of (Inwal Surgery (1878), The Pedigree of Possase (1884), A Smaller Altas of Illustra-tions of Clinical Surgery (1895), and Fish-

Europe in 1553, who went out to conquer the prov. of Venezuela granted to the Welsers of Augsburg by Charles V. In 1541 he set out at the head of an expedition to seek the mythical El Dorado, and after wandering about for some years returned to Venezuela to find the viceroyalty usurped by Juan de Caravajal, who seized H. and treacherously put him to death. See Zeitung aus India Junkher

Philipps von Hutten, 1785.

Hutten, Ulrich von (1488-1523), Ger. poet and author, b. at the castle of Steckelberg, near Fulda, Hesse. He was steekelberg, near Fulld. Herse. He was the eldest son of a noble but undistinguished family and was destined by his father for the cloister, being of feeble health. He was sent to the monastery of Fulda, but greatly disliked the life there, and in 1505 fied, going first to Cologne and afterwards to Erfurt and Frankfort-on-Oder, where he took his master's degree and pub. his first noon. He want from and pub. his first poem. He went from there to Wittenberg and Leipzig, and then passed into Italy, where he was plundered in the war between Charles V. of Spain and Francis I. of France at the siege of Pavia, and later took service in the emperor's army. Later he returned to Germany and had bestowed upon him by the Emperor Maximilian the laureste crown. While in Italy H. became imbued with a hatred of the papacy, and on his return to his native land he estab. a small printing press of his own, and issued pamphlets in Ger. violently denouncing the Rom. clergy. He in turn was denounced at Rome by the Archbishop Aibert, and availed himself of the protection of Franz von sickingen, the champion of the knightly order. He was, however, soon forced to flee from the latter's castle and went to Busle, where he quarrelled with Erasmus, who did not approve of his extreme measures. From this time onwards till his death at Zürich, this time onwards till his death at Zürien, he lived a wandering life. His chief works were: Ars versificand; Nemo; Vadisumus; Epistolæ and many admirable poems in Lat. and Ger. His works were ed. by E. Bocking (1859-70). See lives by D. F. Sträus, 1858 (trans. 1874); O. Flake, 1929; and H. Holborn, 1929; also P. Kalkoff, Hutlen und die deutsche Reformation, 1920 P. Held. Ulrich von Hutlen, seine geistige Aussinandersetzung mit srine glistige Auseinaulersetzung mit Katholizismus, Humanismus und Reforma-

appointed to the command of the Eighteenth Army. For the Ger. offensive in
March 1918 his army was specially
forganised and augmented in order to
break through the Flesquières salient,
During the Alites' counter-offensive in
Aug. 1918 his army suffered severely at
the hands of the Brit. and Fr. in the Avreolise sector. After the war he became
president of the Ger. Officers' Society.
Hutt, Lower, and Upper, see Lower
Hutt, Lower, and Upper, see Lower
Hutten, Philip von (c. 1515-46), tier,
adventurer, b. at Birkenfeld, and a relative of Urich von H. He joined a band
of 600 adventurers from all parts of
Europe in 1553, who went out to conquer
the prov. of Venezuela granted to the
Welsers of Augsburg by Charles V. In
1930.

1930.

Hutton, Richard Holt (1826-97), Eng. journalist and critic, b. at Leeds. His best work is shown in Essays, Theological and Literary (1871), and he also wrote lives of Sir Walter Scott and Cardinal Newman. Sec J. Hogben, R. Hutton of the Spectator, 1899. Richard Holt

Huxley, Aldous, Eng. author, b. in 1894; brother of Julian Sorell Huxley (g.v.), educated at Eton and Balliol, Oxford. In 1919 he was on the staff of the Athenaum, and, later, dramatic critic for the Westminster Gazette. His early but, beyond Leda, a poem which combines gorgeous description with a frank but unexceptional interpretation of the classical myth, his poetry is mostly to be described as scientifically satirical, a method which he continued with success in his novels. The short story is perhaps his most success ful medium; but he first attracted wide attention with his movel. Antic Hay (1923), and enhanced his reputation with Point Counter Point (1928). This latter book was dramatised by another author, but the dramatic method is directly opposed the dramatic method is directly opposed to H.'s method, which is deliberately to flatten all emotion and incident to the same level, the resulting impression being that nothing is worth while in a world altogether negative. His negative philatricial will be a made of the protection. orophy limits him to a range of characters who best exemplify it, and, for this reason, his interest is brief, but always sustained by brilliance of observation, wit, and satire. He has the mocking humour of a Hogarth. Each new novel is a fresh ex-ploitation of his box of puppets; he talks to them and makes them talk to him with the most brilliant ventriloquial virtuosity in modern fiction. His earlier work was in the style of Thomas Love Peacock; but later he changed to the manuer of H. G. Wells, whose use of the novel as a forum of social ideas has done so much to transform the novel of this century. This may be illustrated by his Brave New World (1932), a brilliant satire on Utopia realised, after development according to plan by modern science, philosophy, and morality. The vision of society here depicted may be awful, yet it is assumed to be the logical result of the apotheosis tion, 1928. of latter-day ideals cultivated by machine-Hutton, James (1720-97), Scottish made humans. He has also written es-geologist, b. at Edinburgh and educated says on philosophical and social subjects.

His other works are: Limbo (1920), Leda (1920), Crome Vellow (1921), Mortal Coils (1922), Little Mexican (1924). Leda (1920), Crome Vellow (1921), Mortal Coils (1922), Little Mexican (1924), Those Barren Leaves (1925), Along the Road (1925), Two or Three Graces (1926), Sesting Pilate (1926), Proper Studies (1928), Do What You Will (1929), Brief Candles (1930), Music at Night (1931), Brave New World (1932), Beyond the Mexique Bay (1934), Eyeless in Gaza (1936), Ends and Meons (1937), After Many a Summer (1939), James Talt Black Memorial Prize for 1940, Grey Eminence (1941), The Art of Seeing (1942), Time Musi have a Stop (1944), Perennial Philosophy (1946), Science, Liberty and Peace (1941), The Jocanda Smile (play, 1948), Apes and Essence (1949); (ed.) The Letters of D. H. Lawrence (1932). See A. Honderson, Aldous Huxley, 1935.

Huxley, Julian Sorell, Eng. biologist; b. 1887; eldest son of Leonard H. (the eldest son of Thomas Henry H.). Educated at Eton (King's Scholar); Balliol College, Oxford (Brakenbury Scholar); Newdigato prizeman, 1908; first in natural science (2001cy) 1909; Naples Scholar, 1909–10. Lecturer in zoology, Balliol College, 182: 12. Research associate of Rice Institute, Houston, Texas, 1913–16. Staff-fleutenant, G.H.Q., Italy, Italy, 1913-16.

Balliol Collego, 15." 12. Research associate of Rice Institute, 1912 13. Assistant prof., Rice Institute, Houston, Texas, 1913-16. Staff-licutonant, G.H.Q., Italy, 1918. Fellow, New College, and senior demonstrator in zoology, Oxford, 1919. In Oxford Univ. expedition to Spitzbergen, 1921. Prof. of zoology, King's College, London, 1925-27—since then honorary lecturer. Fullerian prof. of Physiology, Royal Institute, 1926-29. Biology editor, Ency. Brit., 14th ed. Visited E. Africa to advise on native education, 1929. Secretary, Zoological Soc. of London, 1935-42; Romanes Lecturer, 1943; Member of Commission on Higher Education in W. Africa, 1944: Director of UNESCO 1946 48; Elected F.R.S. in 1938. H. is endowed with wonderful powers of lucid exposition. His writings have popularised the most abstruse secrets of bilogy in the same way athose of Jeans and Eddington did in the realins of astronomy and modern physics. realms of astronomy and modern physics. realing of astronomy and modern physics. College of Surgeons (1853-99), Fullerian Pub.: Holyrood (Newdigate poem, 1908), The Individual in the Animal Kingdom (1912), Essays of a Riologist (1923), inspector of fisheries (1813-85), and rector The Stream of Life (1926), Essays in Popular Science (1926), Religion without Revelation (1927), Bird-Vaching and Bird Echaviour (1930), Science, Religion, and was one of the original members of (1931). Has ed. textbooks of animal biology: An Introduction to Science (with E. N. Du C. Andrade) vols. 1-1 (Simple Science) (1931-35), Problems of Relative throuth (1932), The Elements of Relative throuth (1932), The Elements of Elemental Embryology (with G. R. de Beer, 1931), Scientific Research and Social Needs (1931), If I vere Dictator (1931), We Europeans (with A. C. Haddon, 1935), At the Zoo (1936), The Uniqueness of Man (1941), Democracy Marches (1942), Evolutions, the Modern Synthesis (1942), Evolutions (1942), Evolutions (1942), Evolutions (1943), On Living in a Revolution (1949-55 resided successively Pub.: Holyrood (Newdigate poem, 1908),

(1941), Evolution and Ethics, 1893-1943 (part author, 1945) (with D. Clevedon), Julian Huxley on T. H. Huxley (1945), lieligion as an Objective Problem (1946),

Religion as an Objective Problem (1946), Man in the Modern World (1947). Huxley, Thomas Henry (1825-95), Eng. scientist, b. at Ealing. He matriculated at London Univ. in 1842, and afterwards obtained a scholarship at the Charing (ross Hospital. Here he accomplished a great deal of work, and in 1845 announced his discovery of that layor of cells in the root-sheath of her which now hears his root-sheath of hair which now bears his name. The same year he graduated M.B. in London Univ., and from 1846 to 1850 was assistant-surgeon on H.M.S. Rattlewas assistant-surgeon on H.M.S. Rattle-snake. During the voyage he devoted himself to the study of annuals, and estab. a morphological plan, dividing Hydrozoa into Radiata and Nematophora. In 1851 he was made F.R.S., became lecturer on natural hist. at the Royal School of Mines in 1854, and naturalist to the geological survey the following year. In 1855-59 he pub, works chiefly dealing with fossil forms, the most important of which are his memoirs on Cephalaspis and Picraspis (1858), the accounts of the Eurypterina (1858-59), and the description of Dicynodon, Rhamphorhynchus, and other reptiles. One of his most brilliant successes was his Theory of the Vertebrate Skull (1858), which was read before the Royal Society. In 1863 he pub. Zoological Evidences as to Man's Place in Nature, as well as On the Causes of the Phenomena of Organic Nature, both of which were widely read and discussed. In 1866 appeared his hermonary Lessons which are his memoirs on Cephalaspis In 1866 appeared his klementary Lessons in Physiology, his Manual of the Comparative Inatony of Vertebrated Animals (1871), and Elementary Buology (with Martin, 1875). In 1880 there appeared his well-known monograph The Cruyfish, which led to the introduction of this animal into elementary courses on zoology. But H.'s pubs. do not represent all his work; he also filled many important posts. He was an active member of four road: A news an active member of four total commissions, including that of the standard of the Royal Soc. ty (1833-67), resident of the Royal Soc. ty (1833-85), respector of fisheries (1851-85), and roctor of Aberdeen Univ. (1872-74). Besides

in Denmark, Holland, France, and Eng He soon developed a strong mathe matical bent and his future greatness was predicted by Descartes In 1601 he entered the lists of science, and his first essay, Eretasis quadraturas circuli, was quickly followed by Theoremata de quad ratura hyperboles clippus, et circuli. In 1655 he discovered a satclite of Satura, and in 1659, the ring of Saturn H was one of the first to apply the circulus pendulum to the construction of clocks, in 16.6 In 1690 he pub important treatises on light and weight. He also improved the telescope and developed the wave theory of high His magnum opus was the H ~logium Oscillatorium (10~3), containing innumerible original discoveries. His researches in physical optics, however constitute his chief el inn Chris See P Huting to mmortality tiaan Huygens in zijn Ieven en Werken geschet t 1868

b. at Blisen 18/1 Leudr of the Belgrin boscialist party and buggomaster of Ant weep 1933 10 and since 1911 I rom 1905 to 1921 he was sceretary of the I and International and between the First and Second World Wars held posts in the Belgian cabinet. Ho was Prime Minister in a coulition give 1946-47 and thereafter minister of education a post for which his early profesorship at Apres and Brussels particularly fitted him Pubs sur les Assurances Sociales Recherches pultiques Hystère a de Su acn (1927) I tude (1912)Mystere de Michel

Huysmans, Joris Karl (1948-1907), novelest of Dutch descent, but Fr by



evident in his works, from the realistic En Ménage (1881), through the transitional A Rebours (1884), and Fn Route (1895), to the great (linax La Cuthédrale (1895), the epic of Chartrea This last work is carrely a novel—it is too devoid of incident too purely introspective—but it is full of beautiful writing and delicate in sight into Christian symbolism and is one of the greatest pieces of inverse literature ever penned I'Oblat (1905), and Ies Foules de Iourdes (1906), are his chief later works

Huysum, Jan van (1682 1719) Dutch painter b at Amsterdam His best pictures are those of flowers and fruits, m which the exquisite colouring and truth of detail produce a close imitation of His works are to be found nature herself in many of the Continental galleries and also in London

Huyton with Roby, par and to of I ancashic Ing., 5 m k of Liverpool, with coal mines. Pop. 5000.

Huzara, see HAZAFA Hvar (It Lesina), is '0 m long, of the Aduntic Sci Dalmitti Yugoslavia The islanders are engaged in the cultivation of olives grapes higs rosemary, etc and in marble quarring, fishing at book building at the vil of st. Nedelja there are prehistoric cases. The cap is Hvar a th tich in buil lings at 1 art treasures of the Middle Ages which is also a popular second record Pop (is) 20 000 (tn) 2000

Hven or Hveen, 1 of weden situated in the wound of m we of landskrona fychol t the lived here in his observatory until I 10

Hwaining, (or Anking), cap of Anhwei Prev (1m) on the Yangteeklang 364 m of Shangh u Pop 38 000

Hwan ho, see YITION RIVIR Hwen thang, or Hiouen-thang (c 60)-(64) Buddhist mink of China b near Honan Between A b 629 and 61) he Honra Between A b 629 and 645 he visited 110 different countries and places in India studying the sucred books and dist. His Memoirs of the Countries of the Hest ire in invaluable source for the hist of the times. This work and a biblio graphy were trans into kr by Stanislas Julien (1853-58). See Hooven Islang (Iribn 18 Oriental Library), 1888. Hyseinth, also called Jacinth (It guient) in mineralogy a variety of vircon

It is an uncommon mineral and is found in the general color of Colon—some fine stone having been found in the form of publics in ratts of New & Wales. The juenth is decembed by some anct writers as a vellow stone whilst offer refer to it as the which would appear to be our sapthic Many of the geins sold as Hs are in reality garnets orange brown hos somite or common stone. Optically it is simple to tell the difference as the garnet has a single and the H a double power of refraction

J. K. HUISMAN Hyaonnth, name applied to various plants of the family Liliacea, especially to those of the genus Hyacrnthus There are thirty species of this group, and all influence of Baudelaire and later of the cour in Africa and round the Mediter-Fr realists to devout Catholicism is ranean; in Britain H orientains, with all



HYACINTH

the soil and climate of Holland seem peculiarly adapted to it. The wild H., well-known to Brit. called woods, at times the Eng. bluebell, is Scill anutans, another liliaceous plant. It is bulbous, and the flowers are borne in graceful racemes. The grape hyacinth, which also occurs in Britain, is Muscari racemosum.

Hyacinthe, (Charles Jean Marie Loyson)(1827-1912), ominent Fr. pulpit orator, b. at Orleans. He entered the order

of Carmelite friars

and preached for some time at Lyons, going from there to Paris, where he attracted great crowds at the churches of St. Sulpice and Notre Dame. In 1869 h, was suspended on a charge of indiscipline, but obtained a di pensation from his monastic vows and became l'Abbé Loyson. In 1871 he became as member of the Old Catholic Congress at Geneva, and the following year he married in London. In 1879 he In 1879 he estab, a Gallican congregation at Paris, cettab, a Gamean congregation at Paris, having resigned his emicey in the Old Catholic Church at Geneva some years previously. See J. A. F. Puaux, Le Pire Hyperinthe et som Eglise; and L. W. Bacon, Father Hyperinthe, 1871.

Hyacinthus, in anet. mythology, the youngest son of the Spartan king Amyelas and Diomede; a youth of extraordinary beauty, beloved of Apollo and Zephyrus (Boreas). He returned the love of the former, but was indifferent to the latter, of Apollo against the head of II. when they were playing quotis. The youth was killed by the blow, and from his blood there sprang the flower of the same name (hyacinth). H. was worshipped at Amy che as a hero, and the Hyacinthia, the second most important of Spartan testivals, was held in his honour.

Hyades (Gk. 'Yaha, the rainy), in Gk. mythology, were seven uymphs who were supposed to have nursed and protected Dionysus, and for their reward were placed in the constellation of the Bull. Their name is probably derived from the fact that their beliacal rising foretold wet

Hymna, name applied to the species of carnivorous mammals belonging to the family Hywnidae, which range over Africa and Asia. They are massive animals, catlike in appearance, with coarse, shaggy fur marked with irregular vertical stripes or large black spots; there are generally four toes furnished with non-retractile claws; the hind limbs are shorter than the H. Euro-Amer. vine, which is more the fore, which adds to the ungainlines capable of resisting l'hylloxera than cither of their movements. The only living of its parents; Prof. Biffen at Cambridge

its numerous varieties, is a favourite genus is Hyana, whose species are mainly cultivated plant of the springtime, and carrion-eaters; they produce a wailing, almost human-sounding, how and are the subject of many superstitions. H. crosubject of many superstitions. H. cro-cuta, the spotted H., is limited to S. Africa, cuta, the spotted H., is limited to S. Africa, and H. striata, a striped species, is found in N. Africa and S. Asia. Proteics cristatus, the aard wolf of S. Africa, is sometimes included in this family. Hyana Dog, or Cape Hunting-dog, name given to Lycaon pictus, a species of carnivorous mammals belonging to the Canide and ranging over a portion of S. Africa.

Africa.

Hyastan, sec ARMENIA.

Hybla, name of three anct. Sicilian cities: (1) Hybla Major, situated on the S. slope of Mt. Etna. (2) Hybla, called the Little, and called Megara from the fact that the latter was built on nearly the same spot. (3) Hybla Herwa, on the route from Agrigentum to Syracuse. The famous Hyblaran honey was obtained from one of these tns.

Hybrid (Lat. hybrida, a cross-breed or mongrel) progeny of two distinct varieties, as in the mongrel; of two distinct species, the common acceptance of the term; or, much more rarely, of two different genera. Faily myestigators declared that Hs. were sterile, but Darwin's experiments clearly demonstrated that this is not always so. as he was able to rear healthy young from a pair of Hs, between the domestic goose and the Chinese goose, which represent distinct species. The production of Hs. does not appear to be possible between whele differing parents. In the animal kingdom many variety-Hs, have been obtained, and rather less species-Hs, torus-Hs, are rare, though the he-goat and ewe have been successfully crossed, as also have the star-fish and sea-urchin. In the case of species, possibly the com-monest examples are the production of the mule from the male ass and mare, and of the hinny from the horse and female ass: other examples occur in the case of who, realous of his rival, drove the discus. The dog and fox; lion and fix r; hare and of Apollo against the head of II, when I didit; canaries and finches, etc. Hybridthey were playing quots. The youth was lish is spoken of by Biola as being (a) natural, when it occurs in the undisturbed in tural conditions (the relatively few cases of this quoted are open to suspicion); (b) incited, when it is under direct human control; and (c) artificial, as in the mixing of the male elements with eggs, as in the mixing of the male elements with eggs, as in the case of fish and frogs. Hybridism has become of importance to florists, in the production of new varieties of garden plants, and their successful experiments date back to the seventeenth century. Gamus-Hs., which are rare, occur, as in the rhododendron, orchid, and azalea. The other forms are more common. Graft hybridism has been chronicled, as in the case of Adam's laburoum, and in the bizzarra from the bitter orange and citron. t shally Hs. resemble one parent more than the other, and generally they do not breed true (see BREFDING and HEREDITY). In many cases the hybridisation results in definite economic gain, as in the case of the H. Euro-Amer. vine, which is more capable of resisting Phylloxera than either

it. Alexander, under cover of a stormy night, effected a landing on an is. in the riv., and therefrom advanced to the opposite bank and casily defeated the cavalry and chariots of Porus. Historians agree that the latter was of such huge stature that though he rode a very large elephant, 'he appeared but proportionably mounted.' This elephant gave extraordinary proof of sagarity and care of the king's person throughout the battle; but though them was defected and care. but though Porus was defeated and captured, Alexander not only restored to him his dominions, but made him his lieutenant over them and over large accessions to them from the ters. of conquered free peoples. According to Plutarch, it is on the authority of Onesieritus that Alexander is said, when coming to land on the slippery and treacherous riv. bank, to have uttered the famous observation, 'Will you believe, my Athenian friends, what dangers I undergo to have you the berald of my fame ' See also under JHELUM.

JHELUM.

Hydaspes, see JHELUM.

Hydatid Disease, Hydatid Cyst, or Echinococcus Disease (Gk. vbaru, a watery vesicle). Certain immature forms of tape-worms—in particular of Tænia echinococcus—are sometimes present in the body, and it is from these that a H.C. arises. Cysts are formed and the brain, liver, lungs, and kidneys are liable to this disease. The cyst may vary in size from the size of a bazel nut to that of a child's head; and the danger depends upon the head: and the danger depends upon the size and position of the cyst. The disease can only be treated surgically. H. arises in man through days being kept too much about a person, for the adult worm, being small, lives socially in the intestines of the dog, lackal, and wolf. Man becomes infected by eating food contaminated with animal facces in which are the egg- of the tapeworm. The H.C. is the immature stage (cysticercus) of the worm. The disease is most prevalent in Iceland, although it is found in most European countries. See TAPEWORMS and BLADDER WORMS.

Hyde, municipal bor. in the co. of Cheshire, Eug., about 4 m. N.E. of Stockport. Its prin. industry is the manuf. of cotton goods, but coal mining and engineering are also carried on. Pop.

was similarly able to produce H. wheats which combined good cropping qualities with resistance to attack by the 'rust' rungus.

Hydaspes, Battle of, fought between Alexander the Great and Porus, an Indian king, whose dominions lay between the Indus and the H. The date is given as about 326 n.c. and from the graphic account of it in Plutarch we learn that our knowledge of the details comes from the letters of Alexander. According to these, the R. H. was between the opposed forces, and Porus drew up his elephants on the banks opposite the Macedonians, with their heads towards the stream to guard it. Alexander, under cover of a stormy 1937. Became the first president of Eire, 1937. Became the first president of Eire, being chosen by agreement between the Flanna Fail and Fine Gael political parties as a non-party man, in 1938. He was a protestant.

Hyde, Edward, see CLARENDON, EARL

Hyde, Thomas (1636-1703), Eng. Orientalist, a native of Billingeley in Shropshire. He was a student at Cambridge, and in 1658 became Heb. lecturer at Queen's College, Oxford, afterwards chief ibrarian at the Bodleian Library. He was also made canon of Salisbury and archdeacon of Gloucester, and eventually canon of Christ Church. He helped Walton with the Persian and Syriac texts of the Polyglot Bible, and wrote Historia Religious Veterum Persarum (1700).

Hyde Park, enclosed space of about Hyde Park, enclosed space of about 360 acs., situated between Piccadilly and Kensington, London. It belonged originally to the manor of Hyde, the property of the Abbey of Westminster, but was appropriated by Henry VIII. after the dissolution of the injunisteries, and is now a royal park. In times gone by duels were fought here, but in the seventeenthy if here as mentioned as century it became a meeting-place of fashionable people, and during the London season is still used for this purpose. It is also a favourite place for various political meetings. Among its points of interest may be mentioned the Murble Arch, now isolated from it; the Gateway at Hyde Fark Corner; the Serpentine, a lake formed on the course of the Westbourne R.; and Rotten Row, the famous riding track Ken-ineton the famous riding track. Kensington Gardens adjoin H. P. on the W. Hyderabad: (1) Prin. native state of

India, and occupies a large portion of the Decean, the central plateau of S. India. It is also called the Nizam's Dominions, and has an area of 82,313 sq. m. The Nizam of li. is the chief Moslem ruler in

India.

H. Is very mountainous and densely wooded in some parts, whilst in other dists, it is flat or undulating. Vast areas are almost uninhabited. There are two prin. tracts called Jelingana and Marsthwala. The chief rivs. watering the dist, are the Godavari, Dudna, Manjira, Pranhita, Wardha, and Kistna, with their tribs. The chief products are oil seeds, rice, cotton, and the sugar cane. The total area under cotton exceeds three million acs. There are large cotton mills, and a number of tanneries and flour mills. 32,000.

Hyde, Douglas (1860-1949), Irlah total area under cotton exceeds three cholar, linguist, and writer, known as 'an million acs. There are large cotton mills, Craoibhin Aoibhinu,' b. at Frenchpark, co.

There are seven art colleges and three professional colleges. The mineral wealth of the country is indifferent, but there is a huge coal mine at Singarent. Pop. 16,338,500, of whom 13,000,000 are Hindus.

History .- Moslem rule and traditions in H. have their remote origins in the Muslim conquest of the Decean 700 years ago; in the foundation of II., the cap. of the State, in 1589, by Kutáb Sháh Muhammad Kuli, a descendant of Sultán Kuli Kutáb Shah, founder of the dynasty at Golconda in 1512; and in the estab-of the present Asaf Jahl dynasty in H. in 1713, when Kamr-ud-din Asaf Jah, a distinguished soldler of the Emperor Aurungzebe, was made Nizam-ul-mulk ('Regulator of the State') and Sulahdar of the Decean (but, later, secured his in-dependence of the Delhi court). After the death of Asaf the right of succession to his power and authority was disputed by his descendants, the Eng. and Fr. supporting rival claimants in the struggle to promote their own influence in the Deccan; but clive's victories compelled the kr. to withdraw from the support of Salabat Jang, who was dethround and murdered by his brother \ :n Ali (1761). Ali afterwards deviatated the Carnatte (1765) but retreated before the Brit. The Brit. Gov., however, compromised with Ali because they wanted his assistance against Hydar Ali (q.r.), and a treaty was concluded with the Nizam in 1766. In 1790 the Brit. Gov. concluded a mili-tary alliance with the Nizam in the war with Tippoo, son of Haidar Ali, and Tippoo had to buy peace at the price of half his realm, which was assigned to the Nizam. On the capture of Seringapatam and the death of Tippeo, the Nizam's dominion-were still further augmented. The Nizam come under the protection of the Brit. Gov. in 1799. In 1857, with the outbreak of the Indian Mutiny, the state of H. and the Nizau's dominious became official. An attack on the Brit scale. critical. An attack on the Brit, residency was repulsed by the H. contingent, who displayed all their wonted loyalty to the displayed an their wonded toyarty to the Brit. connection; and in 1860 a new treaty was made by which the Nizaurters, were further enlarged so as to be cotorninous with H. In 1902, in a treaty made by Lord Curzon, the dist. of Berar was assigned in perpetuity to Great Britain and the H. contingent was incorporated into the Brit. arms. The N. thus became the prin. Moslem ruler in India.

The long and bitter controversy over the long and long and bitter controversy over the long and long and bitter controversy over the long and long and

justification from the fact that Hindus constitute 85 per cent of a total pop. of seventeen million. In theory the Indian Union had a valid case on both heads, although the Nizam claimed that he was repeatedly assured by the Brit. Gov. that repeatedly assured by the Brit. Gov. that he would be at liberty to choose whether to accede or remain independent, and it seems evident that H. was deserted by Brituin when she transferred power to Indian hands, leaving the Nizam's gov. to fend for itself against the rising tide of Congress sentiment. By early 1948 all the other Indian States had been induced to proceed to the Union. dured to accede to the Union; only H., the premier principality, remained aloof and defaut. When in June 1947, it was known that India was to be partitioned the Nizam amounced in a firman that be did not intend to accede to either India or Pakistan but would preserve his independence. This was the signal for the launching of a civil resistance movement by the H. State Congress, a movement sponsored by the Indian National Congress; but after some thousands of arrests had been made many leaders of the State Congress fled to adjacent Union ter., while their president conducted a propaganda tour of India. A still more propaganda tour of India. A still more dangerous challenge to authority came from the communists acting chiefly from adjacent areas of N. Madras, where they were disrupting the Nizam's regime. Local Mushins in H. banded themselves together to resist communist raiders. This was the origin of the Ruzakar or volunteer movement—which soon became a thorn in the side of the Indian Nationalists, for they were in effect the private army of the Moslem party in H. Actually started in the spring of 1947, the 'Association for the Unity of Moslems' (Vajlis i-Ittehad-cl-Muschnin) became the monthipped of militant Islandic elements mouthpiece of militant Islamic elements and much the most influential party in the State. They regarded themselves as the champions of the Nizam against both (ongress and communists. Accordations between the Indian Gov. and the Nizam went on slowly and by Nov. (1947) an agreement on the terms of accession had been drafted, but it was abruptly dropped under vehoment pressure from the Itte-had. The most that was agreed on was a 'standstill agreement' for a year, during which the Nizam retained internal autonomy but entrusted the control of foreign relations to India. In the meantime the Nizam undertook to frame a more liberal and progressive constitution and intro-duce a number of limid ministers into his Administration. But hopes of settle-ment faded in face of the hostility of the Razakars. In June 1948 the Nizam sent a former premier, Sir Micza Ismail, to negotiate fresh terms at Delhi; but a draft agreement was rejected by the Nizam, again at the instance of the Itte-had or Razakars. The Indian Gov. there-upon decided that no agreement could be hoped for until the influence of the Moslem militants had been offset, and thereupon called on the Nizam to allow Indian troops to return to the camp at and progressive constitution and intro-

withdrawn (Nov. 1947) after the standstill windrawn (Nov. 1947) after the standard agreement. This request too, was rejected. Thus the long wrangle between the Gove of India and H. came at last (Sept. 1948) to a decision by force of arms Indian troops entered H. on Sept. 13. The invadors, moving from all quarters of the convention of the standard of the convention of the conve of the compass, had soon advanced deep into H meeting with some opposition from the Razakars Meanwhile the H Gov appealed to the Security Council of the United Nations but there were juri dical on tacles to the hearing of the case of a non member of the laited lations, and in an case the appeal was tool te By Sept 1) the invalon had a neved its purpose the Indian column commander receiving the form a surrender of the H army at a point near Secuncer ib 1 and soon afterwards Indian tr apsenter Itait for this howed that it hid no in tention of reposing the Nizan or cf How of light showed that it had no intention of (epishing the Nizam of of ending his dynasty it spite of popular clamons for this in 191) the Nizam transferred to the state (soy about 7000 sq m of limit (about one tenth of the state) which he held as his personal property (2) Name of the cap of the above state is situated on the 1 b of the above state 13 situit d on the 1 D of the R Musi and is the epith largest city in India. It possesses it inviting buildings, thef amongst which are the Vicca Mosque and the Char Miner or I our Minare 4. The city is surrounded by a stone wall with thirteen gites, and resembles a parallelogium in shape. The beautiful grounds of the residency and many tipe buildings we don't fit d by many not buildings wite deviatited by floods caused through the overlow of the R Musi in 1908. The or mania I niv is situated here. Pop 457,000 (5) Name of a city in Bombay, for crit the cap of Sind. It stands on a hill, which serves as an excellent indured forties. Pop 102,000. many time buildings ware deviatited by

102 000

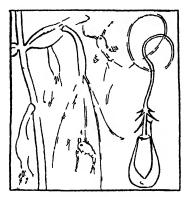
Hyder Alt (1723-82) Indian ruler and ommander, the second son of a Mohani medan chieftain. He was turned out by his father to beck his own future. His brother commanded a buyade in the Wysore army and H occisionally acted for him, but spont most of his tire in study ing Fr army tackles He in luced his brother to purchase artillery and tireating, and enrol Turopean sailors as gunners In 1743 he obtained an independent com mand and during the next twelve veus became complete master of the Rajah of Mysore and his kingdom. By the con-Mysore and his kingdom. By the conquest of kanara he gained the treasures of Bednor, and his destruction of the military caste of Nairs of the Malabar coast caused the gov of Madras to send Col Smith with a small force to check his advance, a flerce battle was fought at Chengam, 1767 and H was defeated, he rejected the teams of poace and cellecting Madras A treety was arringed rovid ing for mutul sid in defensive as The Brit. broke faith and H. commenced to ng for mutu and in defending that I need to state the constant of constant of constant of the print broke faith and II. commenced to revenge himself, in one encounter College h

the Brit fleet selzed Negapatam. sent his son Tippoo to gain help from the ir but died suddenly before his return This man could neither read nor write, was a more alventure, yet became the most formidable rival the Prit encount-ered in India and treatened the extinction

of the I India Company
Hydra, in Gk legend, a celebrated
minster with a number of heads, inhabiting the marshes of Lerna in the Pelo ponnesus Hercules had to destroy this monster is one of his twelve labours, and he ac omplished the feat with the aid of Folans I he middle head was immortal, and they manage i to sever it and bury it

under a huge rock.

Hydra, have of the single genus of first water 1 plays belonging to the culenterate Hydrida. The species are widely distributed being found in I urope, America New Zealand Aistralia, and In Britain they tropic il Altica



HIDRA CATCHING CYCLORS

found it i he i to weed or plant stilks in still fr sh water these solitary polyps have a tubular billy will, and the general tive products are developed in the ectoderm the nouth is placed at the summit of the hyr tome and there is a crown of long slend r hollow tentacles, varying in number firsts in H ruggers and H objects to eight in H ruggers and H objects to eight in H ruggers All species are connivoring and will swallow Entomotrace of considerable size, until the body will expands to twice its usual dimensions. dim nsions

Hydra (and Hydrea), is in the Grecian Arcmpel up off the coast of Morea, form ing with the neighbouring 19, of Dokos the bay of 11 It has an area of about 21 sq in and its greatest length is 11 m Its surface consists of barren rocks, only

and shipbuilding The Hydriots were re-nowned seafaters and traders in the past their business leading them to the Baltic Pop and the Americas (is.) 3700 ,

(tn.) 3000.

Hydra, or 'The Water-Snake' one of the old constellations, being mentioned by both Aratus and Ptolemy From the time of the former it has always been a triple figure a long snake, represented as trailing upon the ground, bears upon his back a cup (Crater), and near to his tail seated a crow (Corvus) The mytho logical meaning is altogether unknown Hydra must be distinguished from Hydrus the S Snake, a s constellation of Lacaille which is situated between the bright star Achernar and the '. pole

Hydracids are acids which consist of hydrogen united to an element or group of elements which do not contain oxygen Hydrochloric acid (HCl) and hydrocyanic acid (HCN) are examples of H. Oxyacids. on the other hand may be regarded as compounds of water with a non metallic oxide, e g sulphuric acid (H₂SO₄ = H₂O₇)

Hydragogues, see under APFRIENTS
Hydrangea, genus of Sanitagaceae,
contains the it is dozen species which
flourish in N lands. Flice are hardy
flowering shrubs with opposite leaves and some are of a chinbing habit they re quire a rich loam soil which should be well drained but not dry Only in favoured situations in warm parts of the country will they remain out of doors all the winter in safety. They are useful shrubs to grow In tubs or pots the commonest example found in Britain being the birtensia (II hortensis) or luccaps, which is a favour ite plant for hotel longes. When in full bloom He are covered by numerous large owning covering of brightly coloured flowers. White blac, rose are the more usual colours, and will change from season to season on the same plant if alum or cop per is dissolved in the water in order to change its colour. Blue flowers may also be obtained by artificial treatment. Some Blue flowers may also kinds of H grow to 10 ft high but the more usually cultivated kinds are alout three or four ft high H macrophylla is a very good garden plant with superb massed colour cheets. They have a flat flower head like that of the wild gue der nower field inciting of the wind grader rose of their varieties are the handsome white macroscipala, the pink Marient and the varieties of woodland II (II strata), such as 'gris-wood,' with beautifully shaped flowers that open white and turn crimson, and H acuminata, with attractive blue flower
Hydrant, see WATER SUPPLY.

Hydrate, term applied to compounds of water with other compounds (or, more rarely, with elements) The water is usually loosely held, and may be driven off by heat or by the action of dehy drating agents such as concentrated sulphunc acid, it is known as under of hydratum or

The Hydriots were re- | hydrate, Na CO , 10 H O. When the water and traders in the past | of crystallisation is driven off from hydrated crystals, the crystalline form is lost, and the resulting powder is known as the anhydrous form of the substance. The colour of the hydrated substance is frequently different from that of the anhydrous; thus copper sulphate pentahydrate is blue, while anhydrous copper sulphate is white. The term is about sulphate is white The term H should not be confused with the somewhat

Hind is commoca with the similar term Hydroxide (q 1)

Hydrauhe Machinery includes all those machines which depend upon water power, and the similar term of the simil They may be divided into two classes
(1) Motor machinery and (2) pumps.
Water falling from a high to a low level
can obviously be used to drive machines, which are thus deriving their energy from water, and these are typical of the first class. The second class would include steam pumps for raising water from a low to a high kivel, or from a low to a high pressure. Thus under the term H. M. are included sev branches of engineering and these branches are dealt with separately (see Accumulator, BRAKE, CRANE, HYDRATTIC PRESS, HYDROKINETICS LIPS, PUMPS TURBINES depend upon Most by distulic max hines depend upon

the I rinciples explained in hydrodynamics and typified by the hydraulic press (q v), while Lord Armstrong's hydraulic accumulat it (see Accumentation) estab the succos of storage and power transmission machinery Pipes for carrying water under pressure are made of cast Iron or sticl, and the thickness and diameter vary with the average pressure of the water trusmitted. A 6 in pipe 11 in thick, will carry water at 7:0 lb per eq in 18 Pripresent the pressure of water in lb. 1ct sq in, d the internal diameter of the pic then the thickings of the pipe can be also before the property of the pipe can be also before the property of the pipe can be also before the property of the pipe can be also before the pipe can be presented from the formula.

t = 0 000125 Pd + x

calculated from the formula

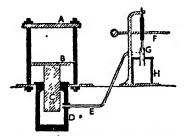
where t equals thickness of the pipe, and r=0.37 in for pipes less that 12 in, in equal ter, $0 \rightarrow \text{in}$ for pipes t = 1.2 to 0 in and 0 6 in for pipes 1 im 30 to

Hydraulic power is utilised in many was because of its corvenience for a islonal use, and of its freedom from er oke and noise, its capability of being trusmitted and used without any attentun and also because of its practical free dom from danger

Hydraulicking see under MINING Hydraulio Press, invented by Joseph Bramah (q t) in 1789, and therefore known as Bramah press. The prinon le used in this machine is a well known one in hydrostatics (qr), viz that a pressure on any put of the surface of any hand is transmitted equally in all directions through the n 154

as will be seen from the accompanying dugram, a free pump G can force water from the tank H, by way of a strong pipe F into a strong cast steel cylinder D (', salts are Hs., thus line vitriol or copper sulphate (rystall consist of copper sulphate (rystall consist of copper sulphate (rystall consist of copper sulphate pentahydrate, CuSO₃,5H₂O, while between which and the plate A—somewashing soda is sodium carbonate deca

thing, e.g. a bale or a number of books, can be pressed. The power of the press is calculated as follows: Let D and D, be the diameters of the pump plunger G and



BRAMAH'S OR HYDRAULIC PRESS

the ram C respectively. Then, if W be the force exerted on the pump, $W_1 \frac{1}{12^3}$ will be the force exerted by the ram. As an example: if a force of 50 lb.-wt. be exerted on the pump plunger of diameter 1 in., then, if the diameter of the ram be 10 in., the force exerted will be $50 \times \frac{10^3}{1^2} = 5000$ lb.-wt. It is thus a very efficient machine, and it is used for pressing cotton and wood bules, bending iron plates, lifting weights, and raising bridge girders into place (hydraulic jacks); the pump G being either worked by hand by a lever F as shown, or by a steam engine.

as snown, or by a steam engine.

Hydrauiio Ram, see Pumps.

Hydrauiio (H.N-NH.), colourless strongly alkaline liquid (boiling point 114°C.), obtained by heating H. hydrate with barium oxide. Its salts are prepared from anmonia and hypochlorite; if the product is evaporated with sulphuric acid the sparingly soluble sulphate separates out. H. forms many derivatives in which hydrogen is replaced by alkyl groups, the most important being phenyl H. (C.H., NH NH 1), an oily liquid, which forms crystalline compounds with aldehyde, and ketones.

Hydrazorio Acid, or Azoimide (NH·N₂), poisonous, highly explosive liquid made by acting on hydrazine with nitric acid. Its lead salt, lead azide, has replaced mercury fulminate as a detonator.

Hydrea, see HYDRA.

Hydrides, compounds containing hydrogen, combined with a single other element, but the term is generally restricted to such compounds where the clement is a metal. Thus H 10 and HCl would be regarded as oxide and chloride, respectively, rather than as H. Compounds of hydrogen with metals such as arenic, antimony, sodium, calcium, etc. (Asil, SbH, Na, H, Cail, mapportively), may be regarded as true H. in the limited sense of the term. With acids or water H. evolve hydrogen, use having been made of this in the preparation of the gas for military balloons.

Hydriodic Acid, or Hydrogen Iodide (III), colourless gas, funing strongly in moist air, and easily soluble in water to a solution, which when saturated has a sp. gr. of 1-70, and contains about 52 percent of HI. Light turns it brown with deposition of iodine. It may be obtained by distilling potassium iodide with phosphoric acid, but is more easily prepared by acting on red phosphorus and iodine with water, or by pa-sing hydrogen sulphide into water containing iodine in suspension. On heating, H. A. is decomposed into its elements. The saits of H. A., the iodides, are crystalline, and as a rule soluble in water. Silver iodide is used in photography, and pota-sium iodide in medicine to lessen secretous and absorb the products of inflammation.

Hydrobromic Acid, or Hydrogen Brounde (Hir), colourless, funing gas with a pungent smell, forming a funing acid. In the presence of light it is decomposed with separation of bromide, H. A. is formed by the action of phosphone acid on potassium bromide; it is most conveniently prepared, however, by dropping bromine on to a paste of red phosphones and water, the gas evolved being passed into water. The bromides, or salts, derived from the acid are crystaline, and, as a rule, soluble in water. They are employed in photography, silver bromide being one of the most important salts that are sensitive to light. Potassium, sodium, and ammonium bromides are also used in medicine, and act as powerful hypnotics and depressants. If taken habitually they are apt to set up a variety of nonsoning known as 'bromism.'

Hydrocarbons, compounds of hydrogen with carbon, may be regarded as the parent substances of all organic compounds. There are many classes of H., of which the following are the most important: (1) the paraffins, of general formula C_pH_{n+1}, which are 'saturated' compounds, with the carbon atoms in an open or a branched chain; (2) 'unsaturated' H. of the cthylene, acetylene, and other series, which will unite with elements, such as chlorine or bromine, without undergoing rearrangement of the molecule; (3) H. containing a ring structure, such as benzone, naphthalene, anthracene, in which the carbon atoms are arranged in one or more closed rings. Combination of the above types is possible, giving rise to an enormous number of H., derivatives of many of them being found in nature. Petroleum and other nuneral oils consist almost entirely of H., there of the parallin series being usually the most plentiful.

Hydrocele, dropsy of the serous membrane surrounding the testis. It may occur as the result of inflammation, or from a blow, but its cases is usually unknown. It can be distinguished from other disorders in the same position by reason of the fact that when the tumour is held between the observer and the light it is seen to be translucent. It can be distinguished from rupture since it gives no impulse when the sufferer coughs. It

usually occurs in middle age, in persons of | general and about fifty species. weak power or with tendency to gout. It does occur in children either as described above or as congenital hydrocele.

Palliative treatment consists in using susponding bandages and tapping frequently. The eurative treatment consists in setting up inflammation by injecting iodine, or by excision of the whole or part of the sac. Injection of chloride of zinc is sometimes used, as causing no pain or inflammation.

Hydrocephalus, see under DROPSY.

Hydrocephalus, means, literally, 'water on the brain,' but includes three distinct discases:

(1) Acute hydrocephalus, or rather tubercular managitis, is due to inflammation of the membranes of the brain because of the presence of tubercles (q.r.). Fluid frequently forms within the brain, and it is a fatal di-case, which is common in childhood, although it does occur less

frequently among adults.

(2) Chronic hydrocephalus is distinct from acute II., since it is a dropsy. A watery fluid forms in the skull, before the bones have united to form the brain case, and by pressing outwards it increases the size of the head on Lausly by forcing the bones apart. This may commence before birth, but is more usual in early childhood. It has been known to occur childhood. It has been known to occur at about the cighth or ninth year, and the fontanciles (gaps between the bones on top of the head) and sutures have been forced open under the pressure. If they do not yield, death quekly results. Fluid also collects within the brain (in the ventricles) causing the cerebral homs-pheres to swell and their convolutions to become fluttened. Children suffering from II. usually die in infancy; some may survive, but they carry their complaint with them through life. Not a few cases of blindness, deafness, palsy, and idiocy are due to this, although the sufferer is not always so affected. Since the skull enlarges and the face only grows at the usual rate, cases can be diagnosed by the dis-proportion between the head and face which ensue. Not much can be done in the way of treatment, though attempts are sometimes made to tap off the fluid Occasionally the disease attacks adults, as in the instance of Dean Swift, who

as in the instance of Dean Swift, who succumbed to it.

(3) Sparious hydrorephalus resembles acuto H., and is often mistaken for it. It is, however, due to a poor supply of blood to the brain, and is a disease of debility. As a result of this disease, the little patient will have a pale, cool cheek, half-abut, regardless eyo, interrupted, sighing respiration, and an unclosed fontanelle. It can be distinguished from acute H. by the fact that in acute H. the surface of the fontanelle will be convex, while in spurious H. it will be coneave or depressed because it lacks support and

as water-plants in tropical and temperate lands, and a few are marine; they usually mnabit ditches, lakes, and rive. Nearly all have ribbon-like, submerged leaves, and some have floating leaves; the male and female flowers usually occur on different plants. They are generally in parts of three, with a two-whorled perianth; the stamens are in from one to five whorls: the carpels form an inferior ovary, are united, and vary in number from two to fifteen the ovary is unilocular, with numerous ovules. The chief genera are Vallisuria, Eloda (E. canadensis, Canadian Pondwed, a very common submerged plant in Great Britain; other species are often grown in tropical aquana), Hydrocharis (II. morsus-ranae is the Frogbit, with kidney-shaped leaves, all floating in the water surface) and Halophila.

Hydrochloric Acid, or Hydrogen Chloride (HCl), colourless gas, closely resemb-ling hydrobromic and hydriodic acids. It is readily soluble in water to a funding, strongly and solution, which is known under the name of 'spirits of salt.' H. A. is formed by the direct union of hydrogen and chlorine, but is most conveniently obtained on a small scale by heating common salt with sulphuric acid, thus

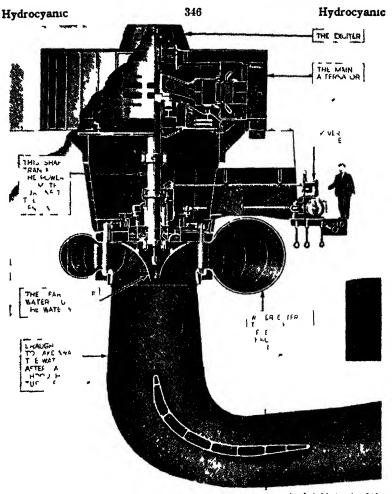
NACI + H.SO. = NaHSO. + HCl.

the acid sodium sulphate formed being capable of decomposing another molecule of salt at a high temp. thus:

$$NaHSO_4 + NaCl = Na_5O_4 - HOL$$

A concentrated aqueous solution of H. A. has a sp. gr. of 1.2, and contains nearly 40 per cent of the pure acid. The acid is very stable, being unaffected by heat or light; with many metals it reacts with theration of hydrogen, the chloride of the metal being formed. In the presence of intre acid, manganese dioxide, and other oxiding agents, chlorine is produced. The chlorides, or salts of Il. A., are, as a rule (exceptions: silver, lead, and mor-curous chlorides), soluble substances. common salt, or sodium chloride (NaCl), is the most important of the chlorides, and is the substance from which all chlorine-containing (ompounds, such as bleathing powder, potassium chlorate, etc. are prepared. If A. 18 largely used as a cleaning and scouring agent for metals, e.g. from before galvanising, etc., and in the dyestims industry. Common salt is used as a preservative, and is a necessary article of food with all animals hung on a vegetable det. Medicinally, it is used internally as an emetic, externally in baths for the relief of scistica, rheumatism. etc.; and it is injected, in solu-tion, to replace loss of blood.

surface of the foliable will be convex, while in spurious H. it will be coneave or depressed because it lacks support and originates in emptiness. Spurious H. fracinorphous rodents belonging to the readily yields to treatment, by means of spurious H. family Cavidee, and consisting of a single spurious fields, and attains a length of 1 or 5 ft. It is aquatic, having webbed digits furnished with hoof-like mails, and is a native of S. America.



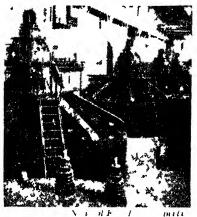
Inglist II to (a Ital DIAGRAMMATIC SECTION OF REACTION TYLE WATER TURBLEF AND GENERATOR

Hydrocyanic Acid, or Prussic Acid ally it is made by heating trimethylamino (HCN) first obtained by Scheele in 1782 from the substance known as Prussian blue. It is formed in the decomposition of the glucoside amygdalin which is present in almonds and other plants. A solution of the sold is conveniently prewhich is

When pure H A is a light colourless liquid in exing at 15° (and boiling at 21 (having the odour of bitter shounds (though many people cannot detect the single from the extremely prisonous, a single drop taken internally causing in stantaneous death due to purally so of the pared by detiling potassium ferrocyanide with dilute aulphuric acid. The anny drous acid may be prepared by the action of sulphuric acid on potassium cyanide, or by dehydrating an aqueous solution of the acid with calcium chloride. Technic-

panied by paralysis of respiration and of the spinal cord In cases of poisoning, emetics, followed by injections of other or alcohol, inhalation of ammonia, and artificial respiration, may be of service Chemically, If A is a feeble acid, finity reddening liturus — Its sits, the cyanides, Ita suits, the cyanides, resemble the halides, but are poisonous and enter into complex acid radicles such as the ferrocyanides and ferricianides Potassium chanide is used as a flux and reducing agent in metallugical work, as reducing agent in metallingical work, as a fixing a cut in photography and sodium cyanid chiefly as a solv in for gold in the working of low grade oies. Potassium cyanide (k. N) is prepared commercially of her from the ferre eyanide, or sulphocyanide, or more recently, by the term of animonic upon a fused mixture of potassium carbon at and coke the similar sodium salt sodium cyanide, Nat N, is made by I singa i inxture of odium ferrocyanic and mixture of odium ferrocyanic and mixture sodium or more usually by metallic sodi ini or more usu div by heating a iniviture of sodium and curbon in a current of gascous ammenia. Medicinally II A 1 0 ed it very dibit, chi tion, e ternally to diminish iteliang in skin diseases and internally as a sedative, and to allay vomitire lieve coughing

Hydrodynamics, see its droken it it is Hydro-electric Power Wholes i the old water mill, the cubest continuance for harnessing a natural source of energy was purely local in application a medern hydro power station is usually linked with a number of others by a retwork of elec-tric transmission mass including one of one or more stam power tation, making the energy as alable over large regions some times remote from the source and transgressing geographical boundaries. The advintage of such an interconnected scheme her in the devibility of operation the case of idusting the power generated to the varying demand, is hydro power stations can be an in the kit started up and may be openited by we control or auto matically, and outinuity of service in case of local breakdown is cusured. The mercasing demand for electric power during the present century is mainly due to the developments of metallurgical and chemical industries requiring a steady aupply of large blocks of power. This need can best be met where water power is tea lily available I lectrolytic production of aluminium from bluxife and fixation of atmospheric nitrogen by the high on atmost in the power electric are as the most familiar examples. The profile development of highly efficient hydraulic turbines and of electric transmission technique, at volt ages up to 380 kV, together with the rapidly rising fuel prices and depiction of coal and oil deposits has thrined the attention to water power resource pie viously deemed unworth; of exploitation The estimates of 'available energy' are being continually revised towards higher values in all countries in switzerland values in all countries in Switzeriand and Switzeriand a nuon less Grant the energy obtainable was given 20 years ago as 10×10^9 kWh per annum, the figure being successfully talsed to 21×10^9 kWh and lately to 27×10^9 kWh 0.2×10^9 kWh pa, and Galloway Sweden gave a figure of 32×10^9 kWh $13^7,000$ h p. 0.9×10^9 kWh pa) of in



(I) NI RATORS IN A POWER HOUSE AL HILL IAW SAGUENAY MINI QUET PO

in 3. the recent value (1448 being 0 10° kWh, of which ale it half is already developed. Not as has lot by 10° kWh (1318 to 120 × 10° kWh 1 king the writ as a whole, about percent derives from water power. In contrast with cut in 1011 degeneras fully resulting the cut in 1011 degeneras fully resulting the cut in 1011 degeneras fully resulting is much greater in sweeden or int ind in Norw vove 99 per cut come from where the cut into from the order to the contrast of the cut in the witzerland and Italy n ents aro rululy placed, and in 11 n the project n is to per cent Nerway and cited have by fait the line teonsump tien of electric energy pe he i of yop n at come worden swifer a mid the 1 > 4 O'the lotal ere a sen rated in way and sweden near a sen rated in and and sweden nor of erecential of the down mounts of home and the indication of the frequent part and the percent in view of the frequent revision of data, which is not always all the first of the author of the frequent person of data, which is not always all the first of the subtree of o cultied on the same less a list of the wit i power resource the world is mis lealing and further could be information on the great witerful of Brit Guana, Int., Australia New Hand & and Santi by Brazil, and Yeutina is not yet avillable. The U.S. and Canada newithout doubt the indest, the energy leng of the order of 180, 200 x 10° kW hand. A storms - as far 1 tpr. sent known serway with 120 × 10° kWh, I nance, tustras, Sweden > un and Italy are thout the same or let (0 × 10° kWh) and Switzerland a little less Great

N. Wales: the total energy is estimated at 6×10^5 kWh.

That 'water costs nothing ' is of course

Any water-power developa fallacy. ment requires considerable civil engineering works, reservoir, dain, conduits, and riv. regulation, besides power-house and machinery, and to this must usually be added the cost of water rights (fishing, timber flotation) and land. But the cost consists mainly in charges against capital, interest, depreciation, taxes, and insur-ance. And the life of a hydro-power installation is generally longer than that of a thermal power station: reservoir, dam and conduits are practically permanent, and the cost of operation and maintenance of a hydro-power station is

The total power that can be obtained from a waterflow of q cub. ft./sec. with a drop ('head') of h it. is 62-4qh/550 h.p., and if the efficiency of the turbine is n, the power at the turbine shaft is 62-1 qqh/ 550 = 0.1135 qph h.p. core-ponding to an ann. output of 732 qph kWh. Investigations preliminary to a hydroelectric project involve determination of the flow and the head that are or can be made available. The actual flow in a stream is best measured by erecting a weir across the stream, but where this is impracticable, the cross-section is measured and the velocity is obtained with a current-meter, by floats or by injection of colouring matter or a chemical litto the water (see Waffer Measure Measure Measure according to the season and from year to year and depends on the discharge from the catchment area. This untimately depends on the precipitation and is affected by the topography and geology of the area, the topography and geology of the area, the vegetation, the climate, and the character of precipitation, whether heavy or gentle showers, raiv, snow or hail. Careful examination of these factors, and especially of seasonal and ann. variation of meteorological data, maxima and minima of precipitation, probable frequency and duration of dry and wet periods, flood conditions and occurrence of ice, is essential. The effect of dry periods was strikingly illustrated by the depiction of the water storage in sweden, following the drought of 1946-17, which forced the authorities to introduce strict rationing of power in 1918.

The final project depends on the natural conditions, and thus no two hydro-power developments are exactly alike; roughly, two main types may be distin-guished: (1) high-head schemes characteri-tie of mountainous countries, utilising a head of 500-5000 ft., and (2) low-head schemes of 2-100 ft. The latter use reaction turbines, sometimes submerged. Pelton wheels are used for head; above 500 ft., though the modern tendency is turbines up to 1000 ft. Intermediate schemes use either Pelton wheels or turbines, according to the quantity of water. The highest head so far utilised (5700 ft.) is at Chandolin in the Rhône valley (Switzerland), with 5 Pelton wheels of 42,500 h.p. the employment of reaction up to 1000 ft. Intermediate kowards

The power that can be supplied continuously is determined by the minimum flow. If it is feusible to shut down at least some of the turbines during the hours when demand is low, the water so saved may be impounded for use during high-load hours. This is called 'pondage' as distinguished from 'storage' of water during seasons or longer periods of increased flow, which demands a large reservoir. Where no take or other natural streams is a valuable floading of according storage is available, flooding of a considerable area is necessary. Storage is characteristic of high-head schemes. In a low-head development where large quantities of water are involved, adequate flooding is too costly. The quantity of water obtainable by storage is determined from run-off records over a number of years; the longer the record, the more reliable are the final figures. Successive monthly run-off values are added cumulatively and the results plotted as a masscurve against time, or tabulated values may be used in a step-by-step method for calculating debits and credits. The tinul choice of reservoir size is dictated by the cost of land and the output required of the power station as a component of the network.

Almost every hydro-power scheme requires a dam, to close the reservoir or as a means of forming or increasing the head as part of the intake to the turbines. Gravity dains, built of timber, earth or rock-fill, or concrete, rest on a wide base and the weight of the dam alone is sufficient to give stability. Buttersed or hol-low dams of reinforced concrete slope at 45° on the up-stream and the water pressure ensures stability. Arched dams are usual in narrow goiges. The recently completed Lumitei dain in Italy has both horizontal and vertical curvature.

In bigh-head stations the reservoir is often at a considerable di tance from the power house, and the water is conveyed from the intake to a convenient point on the hillside above the power-house in a conduit which may be an open canal, a conduit which hay no im open canal, a finne, a tunnel, or a pipeline, but generally following a level curve. The conduit leads into the forebay from which the pendock, a group of steep pipe-lines, convey the water to the turbines. At the lead in from the penstock to the tuchme gates a vertical surge tank is often provided to relieve pressure variations in the penstock caused by sudden opening or closing of the turbine gates. The condut leading out of the power-house is known as the tail race. In low-head power schemes the power-house is usually adjacent to or built into the dam.

Hydraute Turbines are either of the

impulse type, of which the Pelton wheel is the only design in actual use, or the Is the only design in actual use, or the reaction type, such as the Francis or the Kaplan turbine. In the Pelton wheel the water issues from a nozzle at the velocity v, theoretically = $\sqrt{2yh}$ ft./sec. gained by falling through the head h ft., in actual practice multiplied by a coefficient (about '99) dependent on the shape of the nozzle. The kinetic energy of the jet is $\frac{1}{4}mv$, where m is the mass of water, and if the cross-section of the jet is gives rise to eddy formation with consess sq. ft. the mass issuing per sec. is $S \times g$ and the h.p. of the jet is small plants. In modern plants of larger state the guide vanes are pivoted and their state the guide vanes are pivoted and their samples of the guide vanes are pivoted and the guide vanes are pivoted and their samples of the guide vanes are pivoted and their samples of the guide vanes are pivoted and the guide vanes are guide vanes are pivoted and the guide vanes are guide

best cross-section of the jet is circular, and the largest practicable diameter is 8 in., giving a cross-sectional area of about 1/3 sq. ft. The quantity of water that can be used is therefore limited, and the Pelton wheel is best suited to high-head schemes. The jet impinges on buckets fixed on the rim of the wheel and thus provides the driving force. As a rule, only one noz/le per wheel is used, although in some cases two nozzies at an angular distance of 90° from one another have been used, whereby the power is, theoretically, doubled, though the efficience is dicreased by interference between one jet and the splad of the other. The nozzie carries an axial 'needle' which is used for regulation of the jet or for closing the nozzle, in a way similar to that of a needle valve. Speed-regulation of modern Polton wheels is effected by deflection of the jet or, as this method is wasteful, by come 'needle regulation and deflection, the needle and deflecton being operated by the governor mechanism. Pelton wheels are usually mounted on a horizontal axis as this arrangement to the strength of the strength.

is the simplost. In the reaction turbines, water enters the runner along the whole circumference through a series of guide vanes so shaped that no shock or eddy formation occurs on passing into the vanes of the runner. The driving force on the runner derives partly from the pressure of the water, partly from the reaction on the runner vanes due to the change in direction of the velocity of the water. By discharging the water through a draft or suction tube, the full pressure can be utilised, even if the turbine is mounted at some distance above the full-race level so as to give easy access for inspection and repair. The carliest reaction turbine was the Fourneyron outward-flow turbine, in which the runner surrounded the fixed who the faller forval turbine was of the axial-the type, the guide vanes being placed above the runner, with axial discharge. The Francis turbine is of the inward-flow type, the fixed guide vanes surrounding the runner, but in the modern designs, the runner is tapering downward and the flow is gradually turned in the axial direction. The Kaplan turbine is an axial-flow type, the runner being shaped like the impeller of a centrifugal with only a few (3-6) yames. The guide vanes of a reaction turbine are surrounded by a spiral volute chamber for delivering the water at an uniform rate around the circumference. This chamber is sometimes (in low-head installations) moulded in the concrete of the foundation. For higher heads (> 100 ft.) a steel casing is used. Speed regulation may be effected by a cylinder gate inserted between the guide vanes and the runner and slided

gives rise to eddy formation with consequent loss of efficiency and is only used in small plants. In modern plants of larger size the guide vanes are pivoted and their angular position is regulated by the governor. In Kaplan turbines the pitch of the blades of the runner is regulated. Large reaction turbines are usually mounted on a vertical axis. If the unit is placed in the torobay, the shaft rests and turns on a submerged lignum vitae heating pad. In larger units the runner and generator rotor are suspended from a thirst bearing sometimes mounted above the generator. The design of a bearing of this kind presents some delicate problems. Holler bearings and Michell segmented bearings have given good results. The electrical parts of a hydro-power

The electrical parts of a hydro-power station do not differ essentially in design from those of a thermal power station Outdoor switchgeur and transformers are favoured wherever possible. See D. B. Rushmore and E. A. Lof, Hydro-electric Power Stations, 1920; A. H. Gibson, Hydro-clastic Empirering, 1921; G. Gerard, Hydro-electric Engineering, 1919; and Reports of the Conference Internation ale des Grands Reseaux Electriques, (C.1 G.R.E.) held annually in Parts.

Hydrofluoric Acid, or Hydrogen Fluoride (11b), coloudess liquid, boiling at 19 % and giving off irritating and dangerous funcs. It is obtained in aqueous solution by heating calcium fluoride (fluorspar) with concentrated sulphuric acid in a leaden retort, and passing the gas evolved into water

$$(CaF_s + H_sSO_s - CaSO_s + 2HF)$$

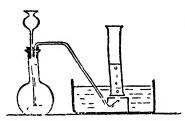
Fo obtain the pure acid, hydrogen potassium thoride, HF, KF, is distilled in a platinum retort, the H. A. being collected in a cooled receiver of the same material. It. A is an extremely active acid, and is especially valuable on account of its solvent action on silice and slicates, being used to otch glass. For this purpose the attele is covered with wax, and the marks or other designs required are out upon the wax with a steel rool: on exposing to the acid, the parts laid bare are etched, and the rist of the article is untouched. The fluorides, or salts of II. A., with the exception of those of the alkah metals, are insoluble in water. Of these calcium fluoride is the most important.

Hydrofluosilicio Acid (II_sSiF_i) obtained torc'her with silicie acid by passing silicon fluoride (prepared by the action of concentrated sulphure acid on a mixture of fluorspar and fine sand) into water. H. A is only known in aqueous solution, which is colourless. If heliaves as a dibasic acid, and forms sparingly soluble potassium and burium salts. It is used in hardening

around the circumference. This chamber is sometimes (in low-head installations) in a sometimes (in the concrete of the foundation. For higher heads (>100 ft.) a steel casing gaseous element, discovered by Cavendish by a cylinder gate inserted between the guide vanes and the runner and silded it is the lightest clean it known, and was axially by the governor. This method if ormerly taken as the standard for

measuring gas density and atomic weights.] measuring gas density and atomic weights.

H. is most conveniently prepared on a small scale by the action of sodium on water, or by the action of zinc on sulphuric acid, Zn + H₁SO₄ = ZnSO₄ + H₃. On the large scale, scrap-iron is used in place of zinc, or the gas is prepared by passing steam over red-hot iron, or by electrolysing water. More often nowadays it is obtained by removing the carbon. days it is obtained by removing the carbon monoraide from water-gas (q.v.). It is also obtained as a by-product in the manuf, of many other chems., e.q. sodium and caustic soda. When pure, H is a colourless, odonriess gas, which condenses at a low temp. and under great pressure to a liquid boiling at -253° C. and freezing at -259° C. The liquid, which was first produced by Dewar in 1898, has a density only 'th that of water, whilst the gas has a density 'th that of air H.



THE PREPARATION OF HYDROGEN Obtained by pouring hydrochloric acid on granulated zinc

is very insoluble in water, and is incapable of supporting respiration, although not actually poisonous. It burns in air with a non-luminous flame, water being formed: if mixed with air or oxygen and ignited a violent explosion is produced. H. is a powerful reducing agent combining with the oxygen, chlorine, etc., of bodies with which it is heated. It unites with many elements to form by drives of very varying properties, such as water, hydrochloric sulphide, and ammonia. acid. H. metal palladium has the power of absorbing about 900 times its vol. of H., use being made of this property in purifying and storing small quantities of gas. H. is present in all acids, in fact, the acids may be regulded as the salts of H. It is also present in hydrocarbons, oils, fats, starth, and in almost all natural and artificial compounds of organic chem Commercialty. H. is used as a reducing agent, as a means of producing buch temps. in the oxy-II. dame, and for filling air ships and balleons. Its prin. use is in the synthetic manuf, of animonia (q, e,) from nitrogen and H H, is also used for hardening only (e, q), in the manuf, of artificial lard and margarine) and in the presentation paration of quick-drying varnishes. Although H. was originally taken as the standard for atomic weights, it has been customary of late to take exygen = 16

compounds of the clements with oxygen are more numerous and more readily analysed than those with H. On this arrangement H = 1.008 instead of unity.

Heary H. See DEUTERIUM.

Hydrogenation of Coal, see COAL, HYDRO-GENATION OF.

Hydrogenation. Direct combination of gaseous hydrogen with a substance—usually restricted to those examples where direct addition of hydrogen to an unsaturated organic substance takes place.

Sabatler and Senderens (1897) invented the method whereby the body to be hydro-genated reacts with gaseous hydrogen in the presence of catalysts such as nickel, cohalt, iron platinum, and copper, at a moderate temp. Thus when a mixture of ethylene and hydrogen is passed through a tube containing nickel at 130-150° C, chane is readily formed: C.H. + H. = C.H. At higher temps, the reverse process of dehydrogenation is liable to occur. other examples are: the conversion of acetylene into ethane aldebydes and ketones into alcohols; nitriles into anines; whilst nickel, which is the most active of the catalysts, can even cause direct addition of hydrogen to benzene derivatives.

Ipatiev (1901) used similar metals and their oxides as catalysts, but worked at high pressures (up to 130 atmospheres). Colloidal metal catalysts have also been employed at almost normal temps, and

pressures.

Industrially, unsaturated oils (e.g. whale, huscod, and cotton seed oils) are hardened by hydrogenation, using nickel cataly-to give products suitable for edible purposes, and for the manufacture of some.

Hydrogen Blowpipe, Atomic. hydrogen is blown through the electric are the atoms composing its molecules are forced apart from one another. If this atomic hydrogen is then burnt immediately in a blowpipe, tremendous heat is evolved and very high temps, are produced. The atomic hydrogen blowpipe is largely used in metallurgy, ongineering,

Hydrogen Bromide, see Hydrobnomic

Hydrogen Chloride, see HYDROCHLORIC Hydrogen Fluoride, see Hydrofic Toric

ACID.

Hydrogen Iodide, see Hydronic Acid. Hydrogen Ion (Hydrion). The hydrogen atom is an electrically neutral system composed of a central nucleus of one solitary proton (the unit of positive electricity), revolving found which is a single electron (the unit of negative electricity). If such a hydrogen atom loses the attendant electron, it is left with unit positive charge, and is, indeed, a proton. In this condition it is called the (positive) hydrogen ion, (In some cir-cumstances a hydrogen atom can take up an electron to form a negative H. I). These solitary protons can be formed from hydrogen by electric discharge (see I) is-OHARGE TUBES), or by bombarding gasas the basis, owing to the fact that the cous nitrogen with or particles, when some protons are shot away from the nitrogen nucleus.

All acids possess the property of giving H. I. in solution. For example, in an aqueous solution of hydrogen chloride (II(1)), lons of hydrogen and of chlorine are present. For every hydrogen atom which has lost an electron, an atom of chlorine has gained one. If an electric current is passed between carbon poleimmersed in such a solution, the hydrogen ions are directed towards the eathode, and, on reaching it, their charge is neutralised, when ordinary hydrogen results. Similarly ordinary chlorine appears at the anode. The sour taste and other specific properties of acids are due to the presence of colourless hydrogen ions. 'Strong' acids give a larger proportion of these ions at moderate dilutions than 'weak' acids do. When a metal liberates hydrogen from an acid, it gives up electrons to the H. I., thereby be-coming itself positively charged. The H. I. is also capable of relatively

rapid movement, and it can also function as a catalyst in many operations such as the inversion of cancengar, and the hydrolysis of esters, amidos, etc. Thus the properties of H and entirely different

The H I in water is hydrated and has the formula H.O.

Hydrogen ion concentration (H.) is expressed in terms of equivalents of II. I. present in grammes per litre. Thus, pure water contains 0 0000001 gm of H I per litre. Therefore (H) = 10⁻⁷. It can be determined usually by (I) measurement of electrical conductivity, (2) determina-tions of the E.M.F. between the solution tested and an unionised hydrogen electrode, (3) the use of special indicators, (4) osmotic pressure methods, pit ralu is given by

Thus for pure water

$$p_{\rm H} = -\log_{10} (10^{-7}) = 7.$$

Suitable conditions for privalues are essential for many biological, chemical and other operations.

(See ACIDS; INDICATORS; NEUTRALI-SATION; IONISALION).

Hydrogen Peroxide, or Dioxide (H₂O₂), is, when pure, a colourless, slightly viseld liquid having a sp. gr. of 1-15, freezing on cooling to a solid, having a melting point of -2°C. It is readily soluble in alcohol or water. The aqueous solution is obtained by the action of dilute sulphuric acid on hydrated barium peroxide, barium sulphate being precipitated. BaO₁ + H₂SO₄ = BaSO₄ + H₂O₅. Sodium percoxide, Na₄O₅, is often used in place of BaO₄. The aqueous solution obtained may be concentrated by evaporation, followed by distillation under reduced pressure. The pure substance has a bitter tasta a faut edgus resembling ratios and taste, a faint odour resembling nitric acid. and is unstable, decomposing explosively under various conditions into oxygen and water. The aqueous solution is more stable, especially in the presence of a "Challenger" (50 vols.). mineral sold, and may be kept for a considerable time. It is usually sold in ments of Hydrology, 1928.

vols.' '20 vols.,' for instance, indicating that 1 vol. of the solution will liberate 20 vols. of oxygen on decomposition. II. P. is a powerful oxidising agent, liberating iodine from potassium iodide, oxidising sulphides and sulphites to sulphates, and bleaching by oxidation. It also has the property of setting free the oxygen, together with its own available oxygen, from certain metallic oxides and highly oxidised salts, thus apparently acting as a reducing agent. H. P. is largely used in the arts for bleaching ivory, feathers hair etc.; as a disinfectant, and also for restoring old oil paintings, by oxidising the black lead sulphide (formed by the action of sulphur compounds in the air on the lead contained in the paints) to the white sulphate. Sodium carbonate and barium percarbonate, prepared electro-lytically, have recently been used with success for the manuf, of H. P. H. P. has been used as a fuel in rockets and submarmes

Hydrogen Sulphate, see SULPHURIC ACID Hydrographic Surveying, see SURVEYING

AND LEVILLING.

Hydrography, scientific description of the waters of the globe. The subject will include: (a) Marine surveying, or the measurement and mapping of the water area; this will result in the preparation of "aps and charts showing the position of stas, lakes, and rivs. Navigation de-mands from the nautical survey or some knowledge of the contour of the ocean bed and in accurate outlining of all shallows, deeps, and reefs. The Hydrographic bept of the Bilt. Admiralty, which was estab in 1795, undertakes the making of such charts under the charge of the livelographer to the Admiralty. The advent of last, deep-draught vessels in recent times has made necessary the recharting of the oceans of the world, and a new survey with new instruments was commenced by the Hydrographic Dept. m 1948 (see Charr). (b), or liverology, Physical properties of the war r masses. The actual composition of the waters on the secretained, and their vided and saving salinities introduce the wide question of oceanic enculation, to which a related the identification of thermal are is in both horizontal and vertical dis-tributions. The tidal circulation has important bearings on questions of navigation, and the hydrographer is concerned in the preparation of tables showing the 'estabs, of ports.' An important sconome study in H. has for its objective the analysis of the distribution and movements of those myricle of micro-organisms, plunkton and rekton, which play so great a part in the life hist, of the various food fishes. Not only does the subject food lisines. Not only does the sult-water cover the investigation of the sult-water lakes also demand special treatment. To realise demand special treatment. To realise some of the classes of investigation comsome of the 'asses of investigation comprised under a seading, reference should be made to the Official Reports of the Scientific Results of the Voyage of H.M.S. 'Challenger' (50 vols.). See also Ocean-Ocean-Courages. See A. F. Moyer, The Flement of Visides of the Post of the Post

Hydrokinetics, or Hydrodynamics, science dealing with fluids in motion. It forms a theoretical introduction to the practical subject of hydraulics. Fluids at rest are dealt with in hydrostatics (q.v.). A fluid may be defined as that which yields to the slightest tangential stress, if it be continued long enough. Thus, easily yields to the signifiest tangential stress, it to be continued long enough. Thus, though a piece of pitch may be easily smashed into small fragments by a blow of a hammer, in course of time, if left to itself, it will spread itself out over a surface and flow like a liquid by virtue of its weight alone. Hence pitch is a fluid, but ince its change of form takes place gradually, it is termed a viscous fluid. All fluids are viscous to some degree, and as the molecules move over one another, friction forces exist which tend to generate heat. But in the case of water, and, in fact, in most liquids, especially alcohol and ether, the viscosity is so small that actual results coincide very closely with the action of a perfect fluid—the ideal fluid, which is inviscid, i.e. which cannot sustain any tangential stress. So the theory of H. doals almost entirely with perfect fluids. Fluid motion may be steedy or unsteady. By steady motion is meant that at any point fixed in space the motion of successive particles of fluid is always the same in magnitude and direction, though it may vary from point to point. If the motion is the same at all points of the fluid, so that the fluid moves like a solid body, it is termed uniform. Moving masses of fluid, bounded partly or completely by solid boundaries, form a stream. A stream boundaries, form a stream. A stream bounded by the same fluid moving differently is termed a current, and when bounded by different fluid is termed a jet. An eddy or a rorter is formed by fluid with a circular or spiral motion. It is proved that a vortex must be endless or have its ends on the free surface of the liquid. The ends on the free surface of the liquid. The actual path of any particle of fluid is called a stream line, and if the stream lines are drawn through all points of a closed curve a tube of flow is formed. Thus there can be no flow across the lateral boundaries of a tube of flow. A line of flow is such that at any point of its length the tangent coincides with the direction of molion of the point. Stream lines and line of flow. the point. Stream lines and line of flow are coincident when the notion is steady.

The usual methods for forming the

general equations of fluid motion are by means of differential and integral calculus and will be given later, but certain particular cases may be dealt with in a more elementary way. Thus the 'cquation of continuity' is obtained from the principle that the amount of incompressible fluid flowing into any completely bounded space, upposed continuously filled with iliquid, coust be equal to the amount that flows out. If a, and a, are the areas of any two cross sections of a stream, and y, z, the components of the velocity of the finid normal to the cross sections, then the amounts of fluid flowing across the sections in a unit of time are a,v, and a,v₄. Hence a,v₁ = a,v₂, and those $a_1 y_1$. Hence $a_1 y_1 = a_2 y_1$, and these velocities are inversely proportional to the areas. Again, consider a liquid moving in a horizontal straight line uniformly—

that is, like a solid body—with no relative motion of its parts, and suppose a small portion of the liquid in the shape of a circular cylinder with its axis along the line of motion to become solidified. Let a be the area of its cross section, I its length, p, and p, the fluid pressures at its ends, m the mass of a unit vol. of the fluid, and I its acceleration. Then mal is the mass of the cyclinder and $(p_1 - p_3)a$ is the component of the resultant force on it in the direction of motion, since the ends are considered so small that the pressure over considered so small that the pressure over them may be taken as constant. Hence, by Newton's second law, $(p_1 - p_2)_a \approx mal/$, and thus so long as there is an acceleration the pressure varies along a horizontal straight line. Now if p_1 and p_2 are the pressures due to depths h_1 and h_2 are the pressures due to depths h_1 and p_1 and the free surface, it follows that $p_1 - p_2 = mg(h_1 - h_2)$, since the principle estable in hydrostatics for pressure at given depths holds in this case.

$$\therefore h_1 - h_2 = \frac{p_1 - p_2}{mq} = \frac{mlf}{mg}.$$

RIG. 1

Therefore the free surface of the liquid slopes downwards in the direction of motion at an angle to the horizon (Fig. 1)

$$\tan^{-1}\frac{h_1}{l} - \frac{h_2}{l} = \tan^{-1}\frac{f}{g}$$

ffence the free surface of a liquid in a vessel carried along at an acceleration makes an angle with the horizontal, and this angle increases if the acceleration increases. If there is no acceleration, the surface is horizontal.

Again, if a vessel, in the form of a right circular cylinder with vertical axis, and the hand within it rotate about the axis with a constant angular velocity ω , then any particle of liquid distant x from the axis will have an acceleration war towards the axis. This increases as x increases. The pressure is therefore least on the axis of rotation and gradually increases further from the axis. Hence the free surface will be lowest in the middle and will gradually rise towards the side of the vessel (Fig. 2). It is found that a section of the surface by a plane through the axis of rotation gives a parabola, and the whole surface is a parabolal of revolution. When the liquid only, and not the vessel, rotates, the outer layer of the liquid in contact with the vessel is at rest. The next layer rotates slowly, and for a

time each successive layer has a bigger angular velocity. As in the previous case, the velocity in the middle is zero, and gradually increases outwards, and honce

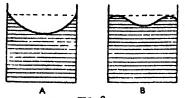
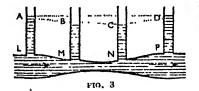


FIG. 2 A, liquid and vessel rotating B, liquid only rotating

the layer of greatest velocity is somewhere intermediate between the axis and the side of the vessel. The free surface then takes the form shown in the figure. The takes the form shown in the figure. accumulation of mud near the inner bank of a riv. at a bend may be accounted for by continuing the argument.

The same general principle of the pres-

sure gradient, as it is called, has been used to correct the common mistake that as a fluid passes through a pipe of varying cross section, it exercises greater pressure on the sides where the pipe is narrower. In fact, the opposite is true. Let AL.



BM, CN, DP (Fig. 3) be small vertical pipes let into such a pipe. Then the height to which the liquid rises in each of these gives the pressure. It is found that at L and P where the cross section is largest, the heights AL and DP are greatest. Account has to be taken in this experiment of the action of friction, which tends to lessen the height of the columns, and has a bigger effect the further the water travels along the pipe. This prin-ciple has a practical use in the Venturi water meter.

The principle of the conservation of energy gives a simple proof of an important equation of motion. Let a_1 , p_1 , r_1 and a_2 , p_3 , r_2 be the area of the cross section, the pressure, and the velocity respectively at two ends of a thin tube of flow, a being so small that p and v may be considered constant for the area. Since there is no flow across the boundaries, the there is no now across the boundaries, the countion of continuity gives $a_1v_2 = a_1v_3$. By the conservation of energy, the difference between the work done by the fluid crossing the two sections is equal to the perfect fluid; if p denotes the pressure at total difference between the energy in the the point (x, y, z) in the fluid and X, Y, Z

E.E.

two cases. In a unit of time the difference between the work done is $p_{1a_1v_1} - p_{1a_2v_2}$, the difference between the potenthat energy in the two cases is $m(\alpha_1 p_1 V_3 - \alpha_1 p_1 V_1)$, where m is the mass of a unit vol. and V_1 , V_2 the potential energy at the two sections, and the difference of kinetic energy is

 $\begin{array}{lll} \vdots ma_{2}v_{2} \times v_{2}^{2} - \frac{1}{2}ma_{1}v_{1} \times v_{1}^{2} \\ \vdots p_{1}a_{1}v_{1} - p_{2}a_{2}v_{2} &= m(a_{2}p_{2}\nabla_{1} - a_{1}p_{1}\nabla_{1}) \\ &+ \frac{1}{2}ma_{2}v_{2}^{2} - \frac{1}{2}ma_{1}v_{1}^{2} \\ \vdots p_{1} + m\nabla_{1} + \frac{1}{2}mv_{1}^{2} &= p_{2} + m\nabla_{2} + \frac{1}{2}mv_{2}^{2} \end{array}$ and this is the same for any two points

and this is the same for any two points of the tine of flow.

The Equation of Continuity. This is the fundamental equation of the hydrodynamics of a perfect fluid. It may be derived as follows. Suppose P is a point (r, y, z) (referred to rectangular co-ordinate axcs) in the fluid and let (u, y, w) be the companients of the velocity parallel to the components of the velocity, parallel to the co-ordinate axes, of the fluid at P at times. Then if the motion is continuous, i.e. if u_1 , v_2 , u_3 are finite and continuous and u_4 u_5 u_6 u_7 u_8 $u_$ we consider any closed surface drawn in we consider any closed surface drawn in the fluid, the increase in the mass of the fluid within the surface in any time of must be equal to the excess of the mass of the fluid that flows into the surface over the mass that flows out of tt. Let p denote the density of the fluid at P(x, y, z) and consider a small parallelopiped $\delta x \delta y$ is with P as centre. Then the mass of fluid that flows in across the face parallel to the plane yz nearest the origin in time of is

$$\left[\rho u - \frac{1}{\delta x} \frac{\delta \rho u}{\delta x} \cdot \delta x\right] = 0$$

and the mass flowing out across the opposite face in the same time is $\left[\mu u + i \frac{\delta_{\mu} u}{\delta_{\mathcal{K}}} . \delta x \right] \delta y \delta z \delta t. \quad \text{Hence the in-}$ crease in the mass of the fluid inside the parallelopiped due to this pair of faces iq = $\frac{\alpha_{PH}}{\delta x}$. $\delta x \delta y \delta z \delta t$ in time δt . Similarly we can find the increase in the nines of the fluid due to the other pairs of faces and we get for the total gain in mass in time δt , $= \begin{bmatrix} \delta \rho u + \delta \rho v + \delta \rho u \\ \delta x + \delta y \end{bmatrix} \delta r \delta y \delta r' t$. But since the mass inside the parallelopiped at time I was parayos, the gain in mass in time of in $\frac{\delta_{ij}}{\delta t}$. S. ϵ_{ij} δ_{ij} δ_{ij}

Hence equating these expressions we get

This is called the Equation of Continuity. For a homogeneous and incompressible liquid p is constant and the above coustion reduces to

$$\frac{\delta u}{\delta c} + \frac{\delta r}{\delta y} \quad \frac{vv}{\partial z} = 0.$$

This is approximately true for liquids, but the more general equation must be

test.

 $\frac{\delta u}{\delta t} + u \frac{\delta u}{\delta x} + r \frac{\delta u}{\delta y} + w \frac{\delta u}{\delta z} = X - \frac{1}{\rho} \frac{\delta p}{\delta x}$

and two similar equations.

The study of H. is concerned with the integration of these equations, subject to the equation of continuity, applied to the special circumstances of each problem under review. The practical importance of H. has increased with the study of aeronautics.

aeronautics.
For elementary work see F. Edser General Physics for Students, 1911. For advanced work A. Ramsey, Treatise on Hydromechanics, Part II, 1920; H. Lamb, Hydrodynamics, 1916; S. L. Green, Hydro-and Aero-dynamics, 1937; W. H. Besant and A. S. Ramsey, Hydromechanics, 1947.

ics, 1940.

Hydrolysis (literally splitting by water). term applied to those chemical reactions in which decomposition is brought about by the action of water, and must not be confused with hydration, in which water is taken up without causing disruption of the molecule, e.g. as in the conversion of quicklime into slaked lime. Examples of H. are numerous, e.g. the splitting up of the salts of weak acids by solution in water, the conversion of esters into acid and alcohol, the 'inversion' of cane sugar, and the formation of ammonium saits from nitrites. In some cases H. takes place by mere addition of water, but more usually heat is required, and in addition a small quantity of acid or alkali to hasten the reaction.

Hydromechanics, term generally applied to the science dealing with the mechanics of fluids, it includes hydrostatics (q.v.) and hydrodynamics or hydrostatics (q.v.) and hydrodynamics or hydromechanics or hydrostatics (q.v.) and hydrodynamics (q.

kinetics (q.v.).

Hydrometer, instrument for finding the densities of liquids. By density is meant the weight of a unit vol., usually

the weight in grammes per cub. centimetre. The relative density of any substance is the ratio of its density to that of water. The most elementary form of H. consists in a thin glass tube AB ending in two spheres C and D. D is loaded so that the instrument floats in a vortical position. By Archimedes' principle, if any body floats in a liquid, its weight is equal to the weight of the liquid displaced. Hence the H. will sink deeper in lighter liquids, and the density of a liquid is inversely pro-portional to the vol. immersed. Since the tube AB is thin, only a very, small additional vol. is B C immersed where the H. sinks lower, and hence the instru-ment is open to the objection that only liquids whose densities are nearly equal can be compared by means of any one H. Thus a H. constructed for HYDRO-METER

heavy liquids will sink entirely in light

the components of external force per unit mass at the same point, it may be shown in water, and to Y in any given liquid; that the equations of motion are then, if V and V' respectively be the vols. immersed in the two cases, the relative density of the given liquid is vi.

> In practice a graduated scale is usually fixed to the stem AB, and the reading opposite the surface of any liquid in which the H. is immersed is the density of the A common form of II. in general liquid. use is the lactometer, for finding the density of milk and hence testing its quality.
>
> Sike's II. is used for ascertaining the strength of spirits. It is a goldplated bruss II. somewhat similar in shape to the usual pattern of II. It is used with a sense of gold-plated brass weights that can be shated on to the bras of the story. can be slotted on to the base of the stem. The 'proof' of spirit can be determined from standard tables when the reading of

the H. has been taken in the spirit under

There are many other forms of H., such as Twaddle's (used for finding the specific gravity of mixtures of sulphuric acid and water), Baume's, and Nicholson's H. The latter is well known as a constant displacement II., and it can be used to compare the densities of different liquids and to find the sp. gr. of solids, but it is of little practical importance outside the school laboratory. Generally speaking the principle of all IIs, is the same. In practice it is found to be very difficult to get an extremely accurate result with a II., because of the surface tension and capillarity of liquids, which gives the surface of the liquid a curved form where it touches the stem. The possibility of error is diminished, however, by making the stem as thin as possible, and by keeping the instrument clean. In finding the density of a liquid to some degree of accuracy, attention must be paid to its temp., as a rise in temp, lowers the density. Hs. are used extensively in industry because they are sufficiently accurate for general purposes and they are convenient and easy to use. They can be tested against standard instruments for a small sum at the National Physical Luboratory at Teddington in England. See also Hydrostatics.

Hydrometridee, name given to a family of hemiptera-heteropterous insects, often called pond-skaters or water-striders. They live on the surface of water and feed on insects and aquatic débris. Hydrometra, Velia, and Mesorelia are common Brit. genera.

Hydromys, generic name of certain species of rodents belonging to the sub-order Simplicidentate and the family order completeentate and the family Murido. H. chrysogoster, the best-known species, is limited to Australia, and is aquatic in habit: It is a ft. or so in length, with a somewhat long tail and yellowish fur; the feet are webbed, and there are only two molars in each half of either jaw. Xeromys is an allied genus confined to Queen land.

Hydropathy, name of a curative system in which the external and internal use of water is the chief remedial measure. General H., introduced by Asolepiades, made rapid progress between 334 s.c. and A.D. 180, when nearly 2000 public baths, including the famous baths of Caracalla and Diocletian, were built. Water was and Diocletian, were built. Water was conveyed by aqueducts to the baths, and in many, like those of Pompeli, there were elaborate hypocausta. The Roms, had baths built also in their colonies, and so H spread throughout Europe. The print natural springs first used extensively in hydropathic treatment were the thermo-pylae of Greece, the thermae at Baiac, and those in the Rom, colonies. Of these, Aix-le-Bains, Baden-Baden, Aachen, Wies-baden, and Bath are still famous hydro-pathic centres. The value of water applications of various kinds is recognised by all classes of physicians, and the name hydrotherapy (q.v.) or hydrotherapeutics is applied to measures involving the use of water. H. is by common consent held to mean a definite theory of cure in which the value of water transcends all else, and the administration of other medicinal agents is looked upon as generally deleterious. The fame of II, originated with the work of Vincent Priessnitz (1801–51), a farmer of Grafenberg in Silesia. Priessnitz had administered cold-water bandages to sick and injured authors with marvellous success, and extending his practice to human beings, including himself, wrought such wonderful cures that the water system became the vogue, and estabs for the direction of the cure were instituted in England, Germany, France, and America. The new practitioners and the orthodox school of physicians denounced each other as quacks for many years; but in course of time ordinary medical practice has absorbed many ideas of the water curers, while the hydropathic estabs of to-day are less extreme in their regu lations than those of former generations.

Hydropericardium, see under Drorss. Hydrophildm, name of a family of polymorphous colcoptera (beetles), which are widely distributed and chiefly aquatic Hydrophilus, the typical genus, contains the species H. piccus, one of the largest of Brit. beetles.

Hydrophis, see Habers. Hydrophobia, see Rabers. Hydrophone, instrument for listening to sound transmitted through water. There are various kinds, one of which receives electric transmissions from the ship on which it is placed after striking the sea bottom. The principle was used during the First World War to locate Ger. U-boats, but was superseded by Asdic (q.v.). See also under Ecno.

Hydrophyllaces, family of dicotyle-donous plants, most of which occur in N. America. They are allied to the Bornginaceae. All are helps or small shrubs and are generally hairy in appearance. The flowers are regular and hermaphrodite, and are generally in parts of tive; the sepals and petals are five in number and united, the stamens are fine and are epipetalous (s.e. attached to the petals); the ovary is superior, and consists of two united carpels, usually with numerous ovules in each localus; the fruit is often a loculicidal capsule. The chief genera

are Hydrophyllum and Nemophila. The latter genus is common in gardens in Great Britain.

Hydroplane. The earliest type of H. was invented by Glenn Curtiss, and was in the form of an acroplane with a pon-toon fitted to the under portion to enable it to rest upon water. Hs. were greatly improved through the Schneider Trophy (q.m.) contest, in which they were largely employed with success by Italy, U.S.A., and Great Britain (see APRON AUTICS). A development of the H. was the coastal motor boat (C.M.B.), which did good work for the Brit. Navy during the First World Success required a speed of at war. Success required a speed of at least 16-18 m.p.h. and the C.M.Bs. were capable of 30 knots per hour. They were upwards of 40 ft. in length, and carried one to pedo, which was discharged att and toll first on the assumption that the swift craft would be able to turn clear of the torpedo after it had been discharged. They were smooth-water craft, and could travel a little faster then Ger. destroyers. Their value lay in a combination of high speed with inconspicuousness. They were most effective at night, but in day-light or moonlight the Ger, destroyers could hunt them down. Those attached to the Dover Patrol were employed to lay mines off Zeebrugge.

Hydroponies, Amer. term coined to describe the growing of plants by water-culture or soilless methods, by Dr. W. F. Gericke, a pioneer in this field. Broadly, the method consists of raising plants tountoes, potatoes, roots, bulbs, carna-tions, herbaccous flowers, etc — in a porous most seed-bed of mert material (peat, leaf mould, sawdust, straw, wood shaying, spun glass), suspended on a netting of wire over a brief air space and tank containing a water solution of nutrient salts. chored in the seedbed, the plant stems grow upward normally, and the roots downward to feed in the solution. Naturent solutions are made up of major plint foods (nitrogen, potasshim, phosphorus, calcium, magnesium) and others needed in smaller amounts (sulphur, boron, copper, iron, manganese, zinc) to give an effective nutritive balance for the plants grown. Success depends targely upon adequate sunshine, aeration of roots and control and circulation of the solution. II. succeed best in warm countries (California, for example), and in greenhouses Capital costs are high, offset by heavier yields per given area, which are likely to be most profitable when consisting of luxury crops, or when produced in barren tropical areas on air routes. In Britain. the climate apparently does not favour true hydroponic methods, and more use and attention is being devoted to sand or gravel-culture methods in which plants are grown in beds of sand, gravel, cinders, part-peat, or similar inert materials watered by a nutrient solution, collected by sub-irrigation and pumped for re-dis-tribution through the bed. As yet, owing tribution through the bed. As yet, owing to high capital costs and relatively poor results under temperate conditions, H. is unlikely to compete seriously or to supplant soil culture. See Dr. W. F.

Gericke, The Complete Guide to Soilless Gardening, 1940, C Isabel Hilver, Hydro ponics, 1941, A H Phillips, The Science of Soilless Culture, 1943

of souters Cutture, 1943
Hydropsy, see Dropsy
Hydroquinone, see QUINOL
Hydroquinone, quinol, or Para-dihydrosybenzene (C.H.4(OH)s), colouriess, odout
less, crystalline substance (melting point
16J°C) having a slightly sweet taste and
readily soluble in alcohol ether and hot
water. It is prepared by the oxidation
of annilms to guinone by many of potential of aniline to quinone by means of potas sium bichromate and sulphunc acid, followed by reduction of the product with sulphur de xide and extraction with ether It acts as a reducing agent being used for

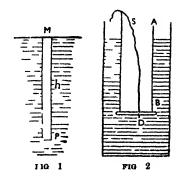
that purpose in photographic developers

Hydrostatics (Gk. 18mp water) science
dealing with the mechanical problems of fluids in equilibrium Fluids are either liquids or gases. The latter are easily compressible, whilst the former are only very slightly so. The perfect fluid to which gases and ordinary liquids such as The latter are easily water approximate is defined as an aggregation of molecules which yield at once to the slightest effort to scparate them from each other From this definition from each other From this ucministration of a property follows the following fundamental property follows the following fundamental property follows the pressure of a property for the pressure of the pressure o perfect fluid at rest is always normal to any surface with which it is in contact. Actually this property extends to all fluids what ever their viscosity, for the molecules of any fluid cannot indefinitely resist the slightest effort to separate them from cach

other
The pressure at a point in a fluid is defined as the force per unit area on a very small area surrounding that point can be demonstrated theoretically can be demonstrated therefore (see bibliography) that in a find at rest the pressure is the same in all directions. Two further important relations are (1) the pressure in a fluid at rest is the same at all points in the same horizontal plane, and (2) the pressure at a point due to the fluid in a fluid at rest is directly propor tional to the depth of the point below the surface of the fluid. The first proposition is estab by considering the equilibrium of a thin horizontal cylinder of the liquid. The pressure over the vertical ends of the cylinder may be regarded as constant over each since they are small. By resolving the external forces acting on the cylinder in a horizontal direction it is seen that the two forces on its ends are equal and there

fore the pressures also must be equal Hence it follows that the free surface of any liquid at rest is a horizontal plane. In order to establish the second proposition suppose P (Fig. 1) he any point in a liquid at rest at a depth h below the surface. surface (onsider again a thin circular runace consider gam a time through the cylinder extending verbially from P to the surface M * The forces on the curved surface are all horizontal Hence the upward force at P supports the weight of the cylinder. If the bethe area of the small horizontal end at P and w the weight of a unit vol of the liquid, then the upward force is was Hence the pressure at a depth h in a liquid at rest is equal to wh.

liquid An elementary experiment for testing the pressure at various depths of a liquid may be made as follows. Take a liquid metal disc D (Fig 2) supported by a string S and a hollow glass cylinder open at both ends 1 and B Pass the string through ends 1 and B Pass the string through the cylinder and pull it tight so as to hold the disc firmly against the lower end B



Lower this into a vessel of water Lower this into a vessel of water — It will be found that when the cull H is sufficiently low, the string may be let go, and the upward pressure of the water alone will be sufficient to hold the disc in position— By using discs of various weights and measuring the depth at which each is just held in position by the water the law may be verified. In actual practice, the restriction may be up to the restriction which can be the restriction with the control of the restriction with the control of the restriction. the receiver supplying water to a th is placed on a high level in order to obtain an adequate pressure on the water main Similarly canal banks and dock gates are made stronger towards the bottom to stand greater pressures

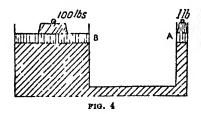
Secing that the pressure in a liquid due to the liquid varies as the depth below the surface, the total pressure on any plane surface is best found by methods of integral calculus But certain cases are The total pressure on a horizontal nimple plane area has been mentioned above thus it a number of vessels of varying stares have bottoms of the same area and are filled with water to the same depth the total pressures on the bottoms AB (Fig 3) are all the same no matter how



much water is put into each vessel, for each is the weight of a column of water force is wat Hence the pressure at a depth in a liquid at rest is equal to wh. In a similar way the resultant vertical where w is the weight of unit vol of the pressure on a portion of any surface is the 357

weight of the liquid enclosed by vertical lines drawn through all points bounding the portion of surface up to the level of the free surface of the liquid. To determine in general the total normal pressure on one side of a plane figure immersed in a liquid, by means of integral calculus, the figure is divided into a large number of very thin horizontal strips; the pressure at all points of the same strip may be considered constant. Let θ be the angle the plane makes with the vertical, x the vertical distance of any strip whose corresponding length is y. Then the total

pressure is $\int_{r_1}^{x_2} w cy$ sec. θdw , where r_1 and r, are the depths of the top and bottom strips respectively. The centre of pressure of any plane area immersed is the point of action of the resultant pressure, and this also is best found by means of integral calculus. In the case of a rectangular area with one side in the surface of the liquid, the centre of pressure is two thirds of the way down. If the pressure on the surface of a liquid is P, then it follows from the second proposition mentioned above that the pressure at a depth h in a liquid at rest is P + wh; in other words a liquid transmit are applied to its surface. This principle is employed in the Bramah press (see Hyprauric Press) lig 1 explains this. A and B are two



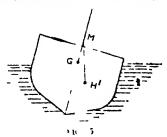
pistons, one of yery much larger area than pastons, one of vivi much larger are than the other, working in cylinders which are connected as shown. The vessel is filled with water. Suppose V has an area of cross section of 1 sq. in., and B an area of cross section of 100 sq. in. Then a pressure of 1 lb weight per sq. in. on V will result in an increase of pressure of 1 lb, weight per sq in on B. Hence the torce on B is increased by 100 lb, weight when a force of 1 lb weight is applied to A as shown.

Atmospheric Pressure. -The earth surrounded by a limited atmosphere which gets less dense at higher altitudes. It may be proved that air has weight by weighing a flusk from which the air has heen exhausted and weighing it again when full of air. So, as in the case of liquids. the weight of a column of air is supported

noticed. A common experiment is performed by means of the Magdeburg hemis-pheres, which consist of two metal hemispheres made to fit exactly together. They may easily be pulled apart by means of handles provided. If, however, the air is exhausted from the interior when they are litted together, a very large force is necessary to overcome the atmospheric pressure and to separate them. The atmospheric prossure is measured by means of the barometer (q.v.), in which the column of arr is balanced by a column of mercury, about 30 in. high. When of mercury, about 30 in. high. When much water vapour is present in the air the lighter, and sometimes a column of incicuity 25 5 in. high is sufficient to balance it. In a similar way if the barometer is carried up a mt, and thus the column of air diminished in height, the necture falls. A balanness constructed mercury falls. A barometer constructed with water would be about 33 ft. high. The suction pump depends on the same principle as the water barometer, viz. that the pressure of the air on the surface of the water outside the pipe drives the water up the pipe where the air pressure value of the pipe where the air pressure is only equivalent to a column of 33 ft. of water, water cannot be raised by means of a suction pump through a height greater than 33 ft.

11 himseles' Principle states that if a

body be immersed in a liquid its apparent loss of weight is equal to the weight of the liquid displaced. Further, a floating body displaces a vol of liquid whose weight is equal to its own. Thus a piece of cork to ally immersed in water will rise to the surface because it displaces more than its own weight of water. In a similar way a balloon rises because its total weight is tess than that of the air displaced. An achery whose specific grivity (q.v.) is about ten-elevenths will float in water with about ten-elevenths of its vol. beneath the surface (for density and sp. gr., see Hydrometer). A most important practical application of the question of floating bodies occurs in shiply iding. A



ship will not be sate unless its shaps and the weight of a column or air is supported by the surface on which it rests, and this weight at the surface of the earth is the arrangement of its earge are such that weight at the surface of the earth is the arrangement of its earge are such that twill right itself after a considerable roll known as atmospheric pressure. It to either side. The first thing then is to ensure that its vertical position is one of Since, in general, exsels contain air at atmospheric pressure inside as well as on the ship will restore it to the vertical outside, this pressure is apt to be un-

G be the centre of gravity of the ship and cargo, H that of the water displaced in a vertical position, and H that of the water displaced after the roll. Let the vertical through H meet the centre line of the ship through G at the point M. Then M is called the metacentre. The equilibrium is not stable unless M is above G. It may be shown that M is the centre of water applications, Among them may be mentioned cold packs and shock baths. The ordinary wet pack consists of a sheet wring out of cold water and wrapped curvature at H of the locus of H which is curvature at H of the locus of H which is known as the curve of buoyancy. See T. Barraclough and E. J. Holmyard, Mechanics for Reginners, 1931; C. J. L. Wagstaff, Properties of Matter, 1933; A. S. Ramey, Hydrostatics, 1936; T. Barraclough, Elementary Mechanics and Hydrostatics, 1940; W. H. Besant and A. S. Ramey, Hydrostatics, 1940; E. Dixon Grubb, Simple Hydroalics for Firmen, 1941; E. E. Pecidel Intermediat Hydrostatics Grubb, Sim 1941; E. E. 1941; E. E. Preidel, Intermediate Hydro-statics, 1948. See also Capillanity:

PUMPS; SURFACE TENSION.

Hydrotherapy, or Hydrotherapeutics, system of cure which involves the internal or external administration of water. It is a branch of ordinary medical practice, and so to some extent is distinct from bydropathy, in which the use of water is claimed as the supreme general cure for disease. The internal administration of water is of course necessary for the main-tenance of life, but there are many reasons for supposing that fairly copious drinking of water is calculated to help the normal process of metabolism. By supplying the body with abundance of fluid, the carrying away of waste products is facili-tated, and the morbid effects of poisonous If the waste matter are thus avoided. practice of waterdrinking is indulged in consideration for times and without seasons, the results are apt to be unsatisfactory, as undue dilution of certain secretions is bound to impair their offcieucy. Good general rules for a person ciency. Good general rules for a person in ordinary health are the following: A glass of cold water on rising, one about an hour before each med, and one before retaring at night. In this way the dilution of the gastric juices is avoided, the water is supplied when the body needs fluid for preparation of gastric juices, and the action of the bowels is likely to be the action of the bowers is takely to be complete and easy. The action of natural water depends on the mineral substances they contain. Sulphates are present in the waters of Curishad and Cheltenham, and those of Harrogate and Bath contain sulphur. All these waters are purgative, and, by removing waste matter from the body, have a stimulating effect, and may be useful in the treatment of gout and rheumatism. Similarly, waters that are directic (i.e. promoting the flow of urine) may be stimulating, whereas others, such as the bromo-lodine waters of

others, such as the bond-bonne waters of Woodhall Spa, are sedative.

The external application of water hat two general purposes: that of skin cleansing, as in the ordinary soap and hotwater bath, and the application in a constant form of a constant required term. venient form of a certain required temp. To these may be added the more doubtful effects of substances in solution being absorbed by the skin, of possible radium

pressure. (See Balneology.) By far the greater number of water applications for curative purposes are simply temp, applications. Among them may be mentioned cold packs and poultiess, hot and vapour baths, and shock baths. The ordinary wet pack consists of a sheet wrung out of cold water and wrapped closely around the body; on this are superposed a number of dry blankets, the patient being kept practically immovable for an hour, when the packing is removed and the patient subjected to a bath at a for an nour, when the packing is removed and the patient subjected to a buth at a little above body-temp. The effect is soothing and provocative of increased cutaneous exerction. The cold pack aims at a lower temp, still; the body is sure that a lower temp, still; the body is sure that a lower temp, still; the body is sure that the packing the packing that the packing that the packing the packing that the packing that the packing that the packing that the packing the packing that the packing the packing that the packin rounded somewhat loosely with a wet sheet, and the other coverings are loosely arranged to allow evaporation as uni-formly as possible. The cold pack is used. in cases of hyperpyrexia, that is, in ex-treme fover. The Turkish bath is really a hot-air bath; it consists of a number of chambers heated to different temps,, so chambers neated to afterent temps, so that the patient is exposed to a temp gradually rising to 150° F, of higher, and is then allowed to regain the ordinary temp, of the air by gradations. The effect is to relieve internal congestion by bringing blood to the surface and to oxcite the peripheral exerctory organs to in-creased activity. A prolonged applica-tion of heat locally is sometimes resorted to in order to cause congestion, and thus lead to a greater activity of discass-fighting corpuseles (see BIER's CONGES-TON TREATMENT). Shock-baths, such as shower-baths, douches, wave-baths, etc., depend upon the sudden application of a particular temp, or the rapid alter-nation of two different temps. The effoct is stumulating. Brine baths have been extensively used with boneficial results for children suffering from general weakness, rhoumatio diseases, and other ailments. Baths acrated with carbon dioxide are prescribed for certain affeccarbon tions of the circulatory system. Saline baths have lately been much used in the treatment of extensive burns.

See F. Howard Humphris and R. S. Wolsh, Physiotherapy; Its Principles and Pratue, 1930; R. M. Queene, Hydro-therapy, 1936; M. B. Ray, Hydrotherapy and Clinatotherapy, 1936.

Hydrothorax (water on the chest), col-lection of serous fluid in one or both of the pleural cavities, associated with dis-ease of the heart, kalneys, and other organs. See also under Diopsy.

Hydroxide, in chem., the term applied to a compound containing one or more to a compound containing one or more hydroxyl (OH) groups, generally in combination with a metal. Thus NaOH is sodium H., Ca(OH), ealclum H., and Al(OH), aluminium H. The most important H. are caustic soda (NaOH), caustic potash or potassum H. (KOH) and slaked lime of calcium H. Ca(OH), In solution, metallic H. yield hydroxyl fore OH. ions, OH'.

Hydroxybenzene, see CARBOLIO ACID. Hydroxyl, the -OH group of atoms. emanations, and the stimulating effects of | It is present in many classes of compounds,

including hydroxides (q.r.), alcohols, sugars, phenols, and many acids. Hydroxylamine (NH,0H), unstable substance forming colouriess deliquescent needles (neiting point, 33°C). It may be prepared by the action of sodium nitrite on sodium bisulphite, followed by hydrolysis, or by the action of nascent hydrogen, from tin and hydrochloric acid. on ethyl nitrate or nitric oxide. It is also prepared electrolytically by the reduction of nitricacid. H., which is usually prepared in the form of its salts, is a powerful re-ducing agent, and forms compounds (oximes) by condensation with aldehydes and ketones.

Hydrozoa, name given to a class of Corlenterata belonging to the sub-phylum Cnidaria: it is coincident with Hydromedisa or Craspedota, with the addition of the Acalepha. This class includes polyps, colonies of polyps which produce polyps, colonies of polyps which produce mediase by budding, and mediase which rise directly from the egg. The polyps, which are small in size, are generally attached permanently to foreign bodies, but sometimes, as in Siphonophora, such as the 'Portuguese Man of War,' the whole colony may be free-swimming. The first polyp as unest an upstanding position termed the Lydranth, which lengthens and buds until it forms a colony or hydrogume. The generative cells or hydrosome. The generative cells which are always ripening and discharging may arise in a variety of places, but al-ways migrate to the ertoderm of the ways migrate to the ectoderm of the gonophore. If feed chiefly on animal substances, and with few exceptions are marine organisms. The class is divided into the orders Hydride (c.q. the fresh water hydra) Hydrocoralline (the corals) Tubularie, Campanularie, Tracho-meduse, Narcomeduse and Siphonophora, Hydruntum, see OTRANTO.

Hydrus: Fabrilous water-snake or sea-rpent. Formerly the name of a genuserpent. of venomous sea-snakes, now called Hydrophis; the hinder part of the body and tall is much compressed and raised vertically to facilitate swimming.

Hydrus (constellation), see HYDRA. Hyeres, or Hières, tn. of the Riviera, in the dept. of Var. 5 France, 11 m. F. of Like its suburb Costebelle, it is a noted winter health-resort, facing the Mediterranean (about 2) in, away). H. Is, (anet. Stee hades), including Port Cros. Porquerolles, He du Levant, form a rond-stead. The tn. hall has a bust of Massical. sillon (1663-1742), and the church of St. Louis and old ruined castle are interesting. Silk twist, essence, brandy, and oil are manufactured, and there is much trade in fruit, flowers, and sult. Pop. 23,600. See C. Lentheric, La Provence Maritime ancienne et moderne, 1880.

Hygieta, goddess of health, was in Gk. mythology the daughter of Asclemus, and was worshipped at Oorinth, Athens, and other places. She is represented as a virgin wearing a long robe, and having by her side a snake which drinks from a cup in her hand.

personal, which affect the health, physical, mental and emotional of the individual or the community. Its main concerns are the prevention of disease and the pro-motion of better health. Improvement in H. Is brought about principally by three processes: (1) The efforts of voluntary organisations formed to meet specific needs which pioneer new ways, until the possibilities are successfully demonstrated and nation-wide acceptance follows. (2) Legislation which is then administered both nationally and especially by local (3) The education of the individual to practise in his daily life the increasingly clear laws of healthy living and to make fuller use of the facilities provided by society for the promotion of personal and community II.

Hitherto the major emphasis has been on environmental H. and in the past hundred years enormous improvement has taken place, evidenced by the complete disappearance of scourges such as plague and cholera, the almost complete control of such diseases as typhold and dysentery, the very much reduced death rates from other infectious diseases, the much improved infant and maternal mortality rates, increased expectation of life, etc. There advances are undoubtedly due largely to the vast changes effected in environmental H., of which the most important are: (a) provision of ample run-ning water supplies which have been ning water supplies which have been rendered pure by protected storage, fol-lowed by physical filtration and chem, trotment; (b) the easy and safe disposal of sew age made possible by running water, by which it is transported through drains to sewage works where tanks, filter beds, etc., result in an efficient which can be safely discharged into rivs., sea or on to land without danger to health; (c) slumcherance and improvements in housing conditions with reduction in overcrowding and the better provision of fresh air, ventilation and similght, the better provision of both natural and artificial highting, the increased use of electricity and gas with diminished atmospherio pollution of urban areas as well as the contribution to cleaniness, comfort, and warmth in the bone, the provision of parks, recreation grounds and open spaces where exercise, fresh air and sun are more madily available, (d) regular collection of refuse and its disposal by incineration or controlled tipping, with the diminution of musance generally and the reduction in breeding grounds for files and vernin in particular; (c) the control of food from the abattoir through the channels of wholesale and retail distribution, preparation and consumption, to promote both improved quality and freedom from contammation of the nation's diet. Special legislation controls the production, handhing heat treatment and sale of milk, which is of particular importance in the diet of the young and a potential danger if insected.

The control of infections varies very Hygiens, derived from the Gk. Hygeia, much with the disease concerned. An out-the mythical goddess of Health—em-braces all the factors, environmental and typhoid, is kept under control by the

provision of immediate notification, prompt | better methods of artificial feeding, the isolation of the patient at home or in a fever hospital, and through investigation to find and control the source of infection before the cpidemic spreads. Infections for which there is a proved prophylactic, e.g. diphtheria, have been greatly reduced by the widespread immunisation of young New drugs for treatment have children. reduced the incidence of serious complications in measles and whooping cough, while the use of new chemical insecticides, while the use of new chemical insections, such as D.D.T. and gammexane, has much simplified control of in-sects such as files, lice and bedbugs. The entry into this country of communicable diseases such as smallpox is prevented by Port H. which includes control of all arrivals both at sea and air ports, the quarantine of suspects and the subsequent disinfection and disinfestation of ships and aeroplanes.

Personal H. is of more recent growth and is promoted principally by services which start before the individual is born and follow his varied needs up to adult The foundations of personal health are laid within the months before birth. and so the care of the pregnant woman is of considerable importance. The observance of simple rules for healthy living, with adequate rest, exercise and above all a balanced diet with extra vitamin supplements will go far to give the baby a good start. Intents of mothers with inadequate diets during the early months of pregnancy show a higher death rate and succumb more quickly to infections during their first few months of life. Repeated and regular examinations by doctor and midwife detect the earliest departures from normality and ensure that corrective treatment can be applied as soon as possible to avert graver condi-tions. The provision of experienced obstetrical care, the increasing use of analgesics during labour, the growing analgesics during labour, the growing interest in the training in methods of relaxation ensure a low montainty and morbidity during delivers. Obstetrual hos-pital beds and emergency mobile obstetue units deal with complications or accidents. Post-natul care helps in the return of the mother to normal health and provides a chance for the prevention of chronic disabilities which may occur after childbirth. The increasing availability of trained home helps to tide the mother over this difficult period in the home is a recent and welcome development.

After birth the infant becomes the focus of expert care. Prematunty, until re-cently so potent a cause of nomatal mortality, has received special attention of late years and in some areas of the country premature baby wards have been opened and ambulance units are specifically trained in life-saving methods for the frailer infants. 'Flying squads' equipped to deal with gastro-enteritis, still the most fatal discare of infancy, are being devel-oped in the larger cities. Increasing em-phasis is being laid on the regular and frequent physical examination of the infant after birth with special attention to his growth, development, care and feeding. The encouragement of breast feeding,

better methods of artificial feeding, the provision of vitamin supplements, talks and demonstrations in the practical problems of mothercraft, visits by health visitors to give advice and help in the home environment are all measures which are bringing about a steady decrease in the infant mortality rate, one of the best available indices for judging the H. of a community.

As the infant grows there is often the provision of day nurseries and nursery schools where the working mother can leave her child under trained supervision and where the toddler gets his first opportunity to adjust to a social millen. The increased rate of infections in the day nursery, however, and the need of infants for individual mothering make it advisable that the day nurseries (for children under two) are used only for really necessitous cases. Children of three and four, on the other hand, who have had a year or so th a nursery school fit in much more quickly to ordinary school life at tive and gain many psychological as well as social and physical advantages. Children psychological development is disturbed are referred to Child Guidance Chinics. Much maladjustment can be traced to the impressionable days of early childhood. and these clinics are being more and more widely used as centres where 'difficult' children or children showing the early symptoms of anxiety and tailure to adjust, can be treated. In this was the more serious later stages of neurosis may be prevented. Often the more important work of these chaics is to help parents to understand the mental needs of the child in order to promote healthy, normal development.

The health and hygiene of the child during his school years is the special responsibility of the school medical service. with its periodic physical examinations. The early detection and treatment of defeets does much to improve his well-being. The child suffering from physical or mental handreaps is discovered early and the provision of special schools of varying types provide education suitable for him. Thus there are different schools for the blind, partially blind, deaf, partially deaf, empled, educationally subnormal, delicate (open-air-schools), maladousted, and in certain cases, diabetic children. For the medicable child there is increasing provision of occupation centres and institutional care where necessary, while careful supervision is maintained throughout life. Residential schools and hospital schools, whether temporary or permanent, provide for children who need long periods of con-vale-cence or for whom the home is unable to provide proper care. The school deutal service with its emphasis on conservative treatment of the child's seeth is producing a marked improvement in dental health. The provision of school meals and the milk-in-schools scheme has done much to improve the physique of the school child. while after-care agencies help to place the child when he leaves, in employment for which he is physically and mentally cap-

comes under the care of the industrial health service which was much extended during the past war. Canteens providing well balanced and cheap meals help to ensure the nutrition necessary for good work. In the larger firms the worker is put to the work for which, physically and mentally, he is most suited, and shifts from one dept. to another are often made in consultation with the medical officer or psychologist. Absenteelsm, sickness rates, output of work, the techniques of different processes and intra-dept, relationships are studied from both psychological and medical aspects an endeavour to make conditions of employment and H. of surroundings such as to promote the greatest efficiency, health and happiness with a regultant increase in production. In cases of injury or long ill-ness the provision of rehabilitation units raises morale and trains the worker to return to efficient employment.

The breakdown of mental health often arises from the home and emphasis on the individual as part of his family unit is therefore coming more to the forefront of social H. Experiments such as the Pioneer Health Centre (q.r.), Peckham, emphasise the nor seity for the family to he considered as a social unit, while Mar-riage Guidance Councils and Family Planning Associations, among others, are concorned with the need for proper sex education of children, preparation for marriage, advice and counselling within marriage. education in parenteraft, and in ways of increasing the health and happiness of the family. Social H. also includes the more negative aspects of family health as in the campaign against venercal disease and the widespread provision of centres for early

recognition and treatment.
The H. of old age is beginning to receive attention as the proportion of the pop-over sixty-five is rapidly rising. The loneliness, boredom and physical disabil-ities of old people are gradually being achostels, travelling canteens, and home helps are all efforts in this direction which are being made to alleviate this problem.

Tropical Hygicae includes most of the scope of H. in this country but concentrates much more on the avoidance and control of diseases almost or quite absent from Britain which are still the major scourges of warm climates. The largest group of these are those spread by insects, of which malaria (q,v_*) spread by certain anopheles mosquitoes (q.r.), is the most widespread, though plague, yellow fever and typhus are more lethal. Other groups of disease widely endemic in the tropics are the intestinal such as typhoid, dysontery and cholers and the parasitic, both internal and external. In the vast majority of all these discuses the cause, origin and modes of spread are sufficiently understood by W. science to make their control pos-sible by tropical H. See Sir G. Newman, The Building of a Nation's Health, 1939; J. D. Kershaw, An Approach to Social Medicine, 1946; W. W. Jameson and

As the school leaver enters industry he | G. S. Parkinson, Synopsis of Hygicne (9th ed.), 1917; J. L. Burns, Recent Advances in Public Health, 1947; A. Massey (ed.), Modern Trends in Public Health, 1947; J. Comerford, Health the Unknown (Story of the Pioneer Health Centre), 1947; Maj. Greenwood, Some British Pioneers of Social Medicine, 1948; J. H. Sheldon, Social Medicine of Old Age, 1918; W. W. Krugger, Fundamentals of Personal Hygiene, 1949; Health and Social Welfare (ann.).

See also Air; Culld; Diet; Foods And Freding; House; Housing; Public

HEUTH: SANITATION: SEWAGE: SOIL: VENDLATION: VITAMINS: WATER. Hygmus, Caus Junus, Lat. writer, appointed librarian of the Palatine library by Augustus. He was, according to some, a native of Spain, or, according to others. anative of Alexandria, and a though originally a slave, was freed by the emperor. His works are mostly lost, but the Fabularum Libir (see M. Schmidt's ed., 1872) and Poeti-con Astronomicon Libri IV. (see B. Bunte's ed., 187.) are assigned to him. See Suctonias. De Illustis Grammaticis; Van Stevnius, De Illustis Grammaticis; Van Steveren, Mutnographi Lavini, 1742; B. Bunte, Dissertatio de vita Ungini 1846.

Hygrometer, instrument for measuring the relative or absolute amount of meous vapour in the air. A hygrograph aqueous vapour in the air. A hygrograph measures and records the humidity on a chart similar to that used in a barograph.

Principles of Hygrometry: (a) Properfess of eapours.—It is a matter of common observation that water exposed to the air disappears more or less quickly. The floors of shops sprinkled with water in the hot weather quickly dry. A damp cloth exposed to the air becomes quite dry; on some days it dries rapidly, on other days very slowly, so that haundresses speak of a 'good drying day' and a 'poor drying day.' The scientific term for the disappearance of the water is evaporation. The water becomes a gas which mixes with the air. This gas is This gas is called aqueous vapour. To clucidate the cepted as a problem for society to tackle laws governing the evaporation of liquids, and welfare committees, Darby and Joan Dalton caused them to evaporate under clubs, special housing accommodation, the simplest possible conditions, viz. in a vacuous space, by introducing them into the vacuum above the mercurial column m a barometer. If a small drop of water is allowed to ascend to the top of the column it disappears very rapidly, filling the space above the mercury and pro-ducing a depression of the column, Another drop will also evaporate and produce a further depression, and so on. A stage is reached, however, at which a drop does not evaporate but forms a thin layer of water on the top of the mercury. The introduction of more bould is not attended by a depression of the mercury column if the temp, is kept constant. The fiquid merely floats on top of the mercury, showing that evaporation has ceased. The any more vapour; it is therefore said to be saturated, and the vapour in the saturated space is called a saturated vapour. The pressure of a saturated vapour is called the maximum vapour pressure. It increases with the temp., but is quite independent of the vol. of the space occupied

by the vapour. If the vapour pressure lever mechanism, at a given temp, is less than the maxinum vapour pressure for that temp, the placed by gold be vapour is said to be unsaturated. It has in Brit, radio-son been proved by Regnault that the presence of a gas does not affect the quantity of vapour which a space can contain. The rate of evaporation is decreased by the presence of the gas, but ultimately the quantity of vapour in a given space at the saturation point is the same whether the space is vacuous or contains air or any other gas which does not react chemically with water. Regnault determined the maximum vapour pressure of water maximum vapour pressure of water vapour at various temps by observing the depression produced by the vapour in a barometer tube. Since the quantity of vapour required to saturate a given space depends solely on the temp. the pressure exerted by saturated water vapour in a space containing air can be found from the tables of saturated vapour pressures compiled by Regnault. (b) Humidity in the atmosphere.—Air contains a proportion of water vapour which varies considerably from place to place and time to time. The ratio of the mass of water vapour to the mass of dry air is called the mixing ratio, if, at the same temp, the water vapour were saturated in the presence of a plane water surface this would be called the saturation mixing ratio with respect to The percentage ration of the den sity of the water vapour actually in the air to the density of the saturated water vapour at the same tomp is defined as the relative humidity. This is approximately the same as the percentage ratio of the mixing ratios and almost identical with that of the vapour pressure to the satu rated vapour pressure Given the temp of the air, then either of the quantities, mixing ratio or relative humidity, will determine the amount of water vapour in the atmosphere—If the air is cooled a temp, will be reached at which the saturation vapour pressure is the same as the vapour pressure of the air, conden-ation will then take place. This temp is called the dow-point, and it is also a measure of the humidity of the atmos-phere. Most Hs measure one of these three quintities. The also lite quantity of aqueous vapour in the air does not determine its dampness, but merely the proximity to saturation. For example, proximity to saturation. For example, suppose that, on a summer's day, the temp is 2) (', and that the pressure of the aqueous vapour is 15 mis, the air would fet dry because the saturation pressure at 25° C is 31 7 mis. On the other hand suppose that, on a cold winter's day when the temp is 5° C, the aqueous vapour pressure is 3 mis, the air would ie) very daint because the air would fel very damp because the saturation presure is 8.7 mls at "C". The mixing ratio in the former case is low. in the latter case high.

The hair hugrometer depends on the fact

Hair is also subject to lever mechanism. Hair is also subject to a temp, effect, and it is therefore being replaced by gold beater's skin, particularly in Brit, radio-sondes (see Radio-Sondes). These Hs have an additional disadvantage in that they have a slow response or lag, which becomes greater at the very

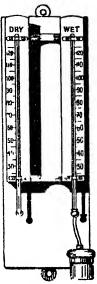
'lag,' which becomes greater at the vision old temps experient ed at high levels.

Dew-point Hygrometers. If an atmos-Dev-point Hygrometers. If an atmosphere containing aqueous vapour is gradually cooled, a temp will be reached at which the vapour will condense. This temp is called the dew point. At this temp the quantity of vapour in the air is just sufficient to saturate it. In an uncontined atmosphere the pressure of the vapour will not change during the cooling, hence the actual pressure of the vapour in the air is equal to the maximum vapour pressure at the temp of the dew point. If, therefore, the dew point is determined, the maximum vapour pressure for this temp is found from the tables of vapour pres-ures, and this is the actual pressure f of the vapour in the air.

Regnault's Hygrometer. In this instrument air is aspirated through ether contained in a silver thimble which closes the lower end of a glass tube Cooling is produced by the evaporation of the other, when the temp of the silver surface reaches the dew point, the polish of the surface becomes dimmed owing to the deposition of moisting The temp which this happens is read on a thermo-meter. The moment at which the dew appears on the thimble attached to the tube can be ascert uncd with great delicacy by comparing its surface with that of the surface of a similar thimble attached to the upper end of the glass tube which

contains nothing but an Dobson Breuer frost point hygrometer This instrument was invented during the A W Bitwer, it works on a similar principle to Regnault's hygrometer but is faster in operation and more suitably adapted for use in an aircraft and with very low temps. In its modern form the cooling fluid (liquid air) is pumped into a black thimble, a jet of an from outside the ener if is directed on to the thimble and witched by a photo electric cell. When the current from the photo electric cell is constant the deposition of frost on the thimble is balanced by the rate of evaporation and the temp of the thimble is then the frost point of the air. With this instrument were made the first accurate measurements of humidity in the high atmosphere, and in 1913 Brewer found the stratosphere to have a very low relative humdity

Het- and Dry bulb Hygrometer.—This instrument, which is also known as a psychrometer, is used at most observing stations throughout the world, cousists of two delicate thermometers attached to a wooden stand (see Fig.) One of the bulbs is covered with muslin and is that the human hair expands with in-the bulbs is covered with muslin and is creasing relative humidity, the instru-ment is not very accurate and has to be calibrated, but it is used almost uni-versally for autographic records. The ex-pansion in length is magnified by a simple is more or less cooled according to the hygrometric state of the air. If the air is quite saturated no evaporation will take place, and the temp. of the wet bulb is the same as that of the dry bulb. The drier the atmosphere the greater will be the difference in temp. between the two



WET- AND DRY-BUIR HYGROMI FER

bulbs. The formula connecting the vapour prossure, dry and wet-bulb temps was first suggested by E. F. August in 1825 and was modified by Regnault in 1825 and was modified by Regnault in 1825, Tables based on Regnault's formula were brought into use in England in 1926, replacing Glassher's empirical tables. Assmann found that the wind speed past the thermometer bulbs was important, and he devised an instrument, the 'Assmann psychrometer,' which sucked air mechanically at a known rate over the bulbs; he produced tables for use with his instrument and for other conditions. A sling psychrometer is used in the U.S.A. and tables very similar to Assmanus's are used with it. At Washington, in 1947, the Conference of Directors of the International Meteorological Organisation recommended the adoption of the new Goff-Gratch tables of asturation vapour pressure over pure liquid water; those have been used in calculating new humidity tables for aircraft observations. See Hygrometric Tables, 4th ed. H.M. Stationery Office Piscussion: 'The measurement of humidity,' Met. Mag. (London), 78, 1949, p. 169.

Hygroscope, instrument used to indicate whether the air is more or less moist. It gives no indication as to the quantity of moisture present. Its action depends on the property which organic substances have of clongating when moist and contracting as they dry. On one of the most common forms, a male and female figure are so suspended (by catgut) with reference to the doors of a toyhouse that when the air is moist the man comes out of one door while the woman goes in at the other, the converse taking place when it is dry. As these Hs. only indicate the humidity of the atmosphere they are moved by a weather change and are therefore usually behandhand with the state of the weather.

Hyksos, or 'shepherd kings,' a people from the k, who conquered kgypt 'with out a bittle,' destroyed her cities and temples, and reduced the inhabitants to shape . Monathe and other with the state of slavery Manetho and other authoritieon the last, of Egypt place the arrival of the H. at the end of the twelfth dynasty, and their expulsion at the beginning of the Och centh dynasty. The Egyptians were not by nature warlike; they were lovers of home and of peace; necessity at times of none and of peace; heressity at times drove them to extreme, but the whole nature of the country was 'to live and let hive 'This lack of multary spirit must have caused the yoke of the barbarian to he very heavy; it had, however, the as stud effect upon the country. At the final expulsion of the H., when the I gypta us at last rose and learnt to combue, n. fate was vile enough for the barbarian, and no Egyptian who was abe-to bear aims ofused to chist. Of the many theories concerning the H., one assumes that, after the downfall of the thuteath dynasty, a confederation of senate tribes from the E. Syrian desert engrated into the Delta during the internal trouble of the country, combined, and then assumed the mastery of Lower Fg.pt. It is a more attractive theory to believe they were non Semitic, and may have been related to, or formed part of, the Kheta or Hittite people (4.1.) These II, having estab, themselves, elected a king called Salatis, who reigned at Memphis and made all Egypt trib to him. The read fortress at Avaris in the Sethralte none or dist. E. of Bubrsts and close to Tans, became their stronghold. Josephus gives us a few names of the H. king., such as Salatis, Beon, who succeeded him, Apichnos, Apophis, Jonias, and Assi-Another king, Apoph. or Apopa I., whose name is inscribed on a granite slab at the temple of Bubastis, appears to bave tried to suppress the worship of the auct. gods of Egypt and struggled to force the county to pay homage to Set (the wicked one). A king Khyan, whose headless statue was found at Bubastis. come to have spread his authority widely, and been either known or recognised as far as Bagdad, and also at Choss 's in Crete, where his name occurs on the 1 of a jar. The scarubs of the H. have been found chiefly at Tell-el-Ychudiych. Their rule in Egypt may Ychudiych. Their rule in Egypt may have lasted 500 years, or, as other authori-ties say, 100 years. Correct dates are still impossible to obtain. See R. M. Engberg, The Hyksos Reconsidered (Or. Inst. Univ. 1

The Hyksos reconstacted (Or. Inst. Univ. Chicago Studies 18), Chicago, 1939.

Hylas, in Gk. mythology, a youth who was a favourite of Alkestia (Hercules), and who was abducted by the Naiads, who fell in love with him while he was drawing water from a fountain in Mysia.

Hylobates, name of a genus of manuals belonging to the Primates, family Anthropomorphide or Simildee, and commonly known as the gibbons. II. syndaetylus, known as the gibbons. H. syndactylu the siamang, is the best-known species.

Hylomorphism, see under Scholastic-

Hylton, or Hilton, vil. in the co. of Durham, Fing. It stands on the R. Wear, about 3 m. W. of Sunderland, and the people are engaged in shipbuilding and the manuf. of iron goods. Pop. 3000.

Hymans, Paul (1865–1911), Belgian Liberal statesman and diplomat, b. at Ixeles. Called to the Bar. 1885. Prof. of

Ixelles. Called to the Bar, 1885. Prof. of comparative parl. hist. in Brussels Univ., 1898-1914. Elected to legislative cham-1898-1914. Elected to legislative chamber for Brussels, 1900. In 1911, after Ger. invasion of Belgium he went to America on a mission to President Wilson. Belgian minister in London, 1915-17. Minister of foreign affairs: 1918-20, 1921-25, 1927-34, and 1931-35. Attended Council at Versailles, 1918. Represented Belgium at Peaco Conterence, 1919. Presided, 1929, at the first Assembly of the League of Nations. Belgian delegate to -Dissermament Conference, 1932; Member of the Council of ministers. 1935-36.

Hymen, in Gk. mythology, the god of marriage, though originally supposed to be the son of Apollo and one of the Muscs, and is represented as a beautiful youth carrying

represented as a beautiful youth carrying

a bridal torch.

Hymenma, genus of leguminous plants found in tropical America. There are eight species in all, the commonest being H. courbaril, the locust or gum-amme tree. The wood is very heavy and takes a fine polish; the resin known as gum-animo exudes from the stem, the seed; are enveloped in a sweet mealy substance

eaten by the Indians.

Hymenoptera, name given to a large order of Insecta which includes the boes, ants, wasps, etc.; its members are characterised by four membranous wings with few returns, well-developed mandibles, movable abdomen, bearing in the case of the female an ovipositor which may or may not be retractile; certain families are furnished with a string, and others with sawing or boring appendages; in the honey-bees, the subordinate mouthparts are produced into a long, tongue-like probesses, with which the insect ox-The head is tracts homey from flowers. globular in shape, and mobile, with com-pound eye and sev. occell on the crown. The larve are cruciform and have a dis-

Ichneumonidee, the larvæ-wasps, etc.; the series Tubulifera, consisting of Chrysididee, the burnished wasps, and the series Aculeata, containing Apidee, the boos, Formicidee, the ants, and many other involvers the series. other important families.

Hymettus, anct. mt. range of Attica, Greece, over 3000 ft. high, about 5 m. from Athens, now called Trelo Vuno (Vound). It has always been famous for its honey. The anets, quarried a much-prized bluish-grey marble.

THE RUMAINS OF THE PAYX OR PLOPLE'S ASSLUBLY IN ATHEMS, WITH THE ACROPO-LISON THE LEFT. AND HYMETTUS RANGE IN THE DISTANCE

The word was em-Hymns (Gk. 1 µ104). ployed among the Oks. to denote songs or poems in honour of gods or of heroes, or composed for some special occasion, and in treece the number of II. was legion. Hesiod, Homer, Pindar, Euripides, all make use of the term and testify to the frequency with which the compositions are used. Oldest among these are the Homere H., a series of brief addresses to the gods. Among the latest pagan Gk, productions are the Orphic H., which deal with the rates of initiation into the Hellenio mysteries. In considering the question of hymnology from a Christian point of view, however, the early Heb. poetry is especially valuable. It shows, indeed, the greatest heights to which religious pootry had risen before the beginning of the Christian era. The unique position which the Davidic podier has ever held in the worship of Christendom shows the recognition of this fact by all nations. The last great pound eyes and sev, occell on the crown. The larve are cruciform and have a distinct head. There are over 30,000 species of H., which are grouped into two suborders, the Sessiventres and the Petiolata. To the first belong Tenthredinide, the saw-flies; Siricides, the wood-borers, etc. The Petiolata comprise the series Parasitica, with Cympidee, the gall-wasps; the song of the Blessed Virgin Mary (Luke i. 46-55), 'My soul doth magnify the Lord,' have been used daily in the choir offices.

As we consider the question of Christian As we consider the question of Christian hymnody, it will be well to begin with a definition, that of St. Augustine of Hippo: A H. 'is singing with the praise of God. If you praise God and do not sing you atter no hymn. If you sing and praise not God you utter no hymn. If you praise anything which belongs not to the praise of God, though in singing you praise, you utter no hymn.' This definition gives the distinction characteristic to the H. which

distinction characteristic to the H. Which belong to the four centuries preceding it.

Eastern Hymnody. The preface to the hymnary of the Mozarabie Breviary tells us that as Christianity itself came from the E., so also did the custom of hymnsinging. The words of Pliny, in the famous letter to Trajan (c. A.D. 110), carry us further then this by showing at how us further than this by showing at how early a date the custom was estab. in Bithynia. Early (ik. H. must be divided into two classes, the first consisting of those written in the rapidly dying classical metres, the second, and more important, metros, the second, and more important, of H. written in a more Oriental and often Hebraic type. Το the first class belongs the oldest of a.. ('histiph H., the Στομοι πώλου δουν, ascribed to Cloment of Alexandria. This H. is simple and childlike, containing nothing but what could be found in the pages of Scripture. higher mystical level is shown in the H. of St. Gregory of Nazianzus (also classical in form) in the fourth century, dealing chiefly with the doctrines of the occumental symbol and the contraction. chiefly with the doctrines of the occument-cal symbol and the contemplation of the Most Holy Trinity. Trans. of all may be found in A. W. Chatfield's Songs and Hymns of the Earliest Greek Christian Poets (1876). To the same school belong Synesius (375-430), Sophronius, and St. John of Damascus. Of all their works only three canons by St. John of Damascus have mentioned an unice in the Gik service. have received a place in the Gk. service-books. The later Gk. H. are to be found chiefly in the various church service books, viz. the twelve vols. of the Menaa, giving the Prayer of Saints; the Greater Octachus or Paracultier, containing the Ferial office; the Lesser Octochus, containing the ordinary Sunday services; the Triodion (Lenten season); the Pente-Triodion (Lenten season); the Pente-costarion Charmosynon (Easter and Pentecost); the Euchologion, containing the occasional offices; and the Horologion or Hours of Prayer. These books contain a vast number of H. of which the best selection is to be found in Christ and Paranikas's Anthologia Greea, etc. They are best known in England by the trans.
of J. M. Neale, of which mention may be
made of 'Christian, dost thou see them?'

which are, unfortunately, almost unknown in the W. The names of Bardesanes (Bar-Daisan, b. 154), and Ephraem Syrue (d. 378) must be mentioned. The H. of this writer still hold an important position in the service books of the Syriac churches. Latin Hymnology cannot be traced further back than the beginning of the fourth century, the earliest name with which any H. can be connected being that of Hilary of Poitiers, of whom Isidore of Seville says that he was the first who flourished in composing hymns in verse. Bours and in composing hymns in verse. Sev. if. in the Mozarabic Breviary are ascribed to him. Contemporary with Hilary was Pope Damasus, to whom two extant II. are ascribed, but the real founder of Lat. hymnody comes somewhat have. hater. This title is unanimously given to St. Ambrose (d. 397), to whom a large number of extant H. is attributed. The twelve which the Benedictme editors give as genuine include some of the best known office II. Among then are 'Æterna christi munera' (The eternal gifts of Christ the King), for apostles and evangelists, 'O Lux beata Trinitas' (O Trinity of blessed light), Saturdays in Trinity, tide; and 'Splendor Paterne glorin' (O splendour of God's glory bright), Mondays from Epiphany to Lent. From the fourth to the eleventh century From the fourth to the eleventh century we have a regular stream of religious poets and hynn-writers, mostly of considerable merit. At the end of the fourth century comes Aurelius Clemens Prudentius, a Spaniard, from whose poems many of the Ferial H. (e.g. Lux ecce surgit aures ') were taken. But his best-known H. is that for the Nativity, 'Corde natus ex parentis' (Of the Father's love begotten). In the fifth century we have the layman In the fifth century we have the layman Scullins, the author of the well-known Christmas H., found in almost all the breviaries. 'A solis ortus cardine' (From east to west, from shore to shore). The latter part of this, 'Hostis Herodes imple' (Why, impious Herod, should'st thou fear 'I), forms the office H. for the Epiphany. Venantius Fortunatus, histop of Pauters (d. c. 609), is far letter known. Portiers (d. c. 609), is far better known. To him belongs the glorious Passiontide II., 'Vexilla Regis prodeint' (The Royal banners forward go), and 'Pange lingua gloriosi' (Sing, my tongue, the glorious battle), both of which occur in the Ron. battle), both of which occur in the Rom. Breviary, but in a mutilated form. St. Gregory the Great, from whom the Gregorian melody takes its name, wrote much, but is less known. Some twelve H. are attributed to the one Eng. Father, the Venerable Bede (673-735). In the next century Fulbert of Chartres wrote the triumphal Easter H., 'Chorus nove Hierusalom' (Ye choirs of New Jerusalom' From the eighth century dates also the 'Urbs heata Hierusalom' which became the H. throughout Europe for the made of 'Christian, dost thou see them I' Hierusalem' (Ye choirs of New Jeruste, Andrew of Crete, 660 c. 732), 'Tis the day of Resurrection' (St. John Damascene), 'Jesus, Lord of life cternal' (Joseph the Hymnographer), 'Jesus, Rame all names above' (Theoctistus of the Stadium). But numbers may be found in any modern hymnal.

Syriac. From the second century until almost the close of the Middle Ages, the churches of Syria, Mesopotamia, and W. Persia produced many excellent H.,

such H. found a place in all service books. The next few centuries are important for the spread of the Sequence, a H. sung before the Gespel at Mass, which was developed from the Alleluia by Notker of St. Gall (d. 912). The greatest of the medieval sequences, however, is the 'Dies ira', dies illa '(Day of wrath, O day of mourning), the authorship of which is ascribed to Thomas of Celano, the friend of St. Francis of Assisi.

ascribed to Thomas of Celano, the friend of St. Francis of Assisi.

English Hymnody.—It would be possible to trace the beginnings of Eng. hymnody to the time of Cædmon (seventh century), but this would lead us by too long a path. It will be well to take the hist, up at the Reformation. When the trans. and adaptations of the old service trans. and adaptations of the old service books were made for the new Book of Common Prayer, it was Cranmer's intention that the old H. should be trans, likewise. But he had not himself the poetic ability for this task, and the work remained undone until the nioeteenth century, when sev. trans. of the whole body of the anct. sarum H. were made. During the two centuries that followed During the two centuries that followed the beginnings of the Reformation there was no book of H. for use in the ling. Church. In the Prayer Book itself there was but one trans., that of the 'Veni, Creator' in the Ordinal. Their place was taken, however, to some extent by the metrical paraphrases of the Psalms. Intil almost the end of the seventeenth century the most popular was the version by Sternhold and Hopling, commonly known as the 'Old Version.' This later gave way to the 'New Version' of Tate and Brady. Sev. from this latter work still find their place in humals, such as, for example, the H. 'As pant's the hart for cooling streams.' In 1623 appeared George Withers's Humma and Songs of the George Withers's Hymns and Songs of the Church, the first attempt at a compre-hensive hymn-book, but it never secured any measure of success. Many excellent H. were written also by Bushops Taylor and Ken. But the first hymn-book defi-nitely designed for use with the service of the Church of England appeared in 1737, with the title Collection of Psalms and Hymns. It was compiled by John Wesley, chefly from the writings of Isaac Watts, and pub. at Charlestown in Georgia. Two years later came the olicial founda-Two years later came the official foundation of Methodism, and all later eds of the book must be classed as Methodist. The next step was taken by M. Madan, who in 1769 pub. A Collection of Psalms and Hymas extracted from various Authors, etc., containing 170 H. It is noteworthy that during the rest of the century all the church hymn-books that appeared were built on the foundation of the various Nonconterpist collections, and that no Nonconformist collections, and that no great hymn writer arose within the church until the production of the Olney Hymns by Newton and Cowper. At the beginby Newton and Cowpor. At the beginning of the unneteenth century there was
a great outburst of hymn-writing and
collecting, which had seen considerable
advance even during the first twenty
years. The productions of this period
are characterised by a striving for uniformity and harmony with the Book of

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Common Prayer, and by a desire to secure official recognition which presents the later general return to the old Gk. and Lat. H. and their trans. Meanwhile, the thirty years which bring us to the middle of the century saw an even greater increase in the number of hymn-books produced. Seventy-four of these are quoted in Julian's Decionary, and these are but a selection of the most important. Bishop Heber's Hymns (1827), containing the hymns of H. H. Milman, was an extremely influential collection, and E. Bicker-steth's Christian Psalmody (1833) was also important. This last was supplanted by the Human Companion by the Rev. E. H. Bickersteth, son of the above-named. The influx of these H., more definite in doctrine and more robust in style, led to a gradual exclusion of the Nonconformist and Calvinistic element which had hitherto bulked so large. Moreover, the standard of religious poetry had over, the standard of reinfood poerry has been raised considerably by the influence of Keble's Christian Year. The Hymnal Noted of 1852 and 1854 confined itself enlirely to Lat. hymna, their excellence being enhanced by the beauty of Neale's trans But the hundredy of hymnals which had now issued from the press had left Kra hymnals are the controlled. left Eng. hymnody in great confusion, and this resulted in the pub of Hymno Accept and Vodern). 1861, a collection which at first contained only 130 H, but which rapidly increased in size and in popularity until it almost entirely supplanted all other collections. At the beginning of the twentleth century sev new hymn-books, all aiming at a higher level of scholarship, were produced. The most important of these are the English Hymnal (1906) and the Oxford Hymnal (1903).

Ayanau (1905).

Nonconformist Hymnody,—The Baptists long resisted the practice of singing II. Then first hymn-writer was B. Kuch, about 1673. The names of J. Stennet (1663-1713), S. Stennett, grandson of the former (1728-95), and W. Noel (1799-1873) are also worthy of mention. Both the Particulur Bantists and the Both the Particular Baptists and the General Baptists now have official hymn-books. The Congregationalists have produced many hymn-writers of great merit. Greatest of these is I-suc Watts (1674– 1715). The names of Philip Doddridge 1715). The Bailes of Fluid Foodstage and Josiah Conder are also well known. In 1859 was pub. officially the New Congregatumal Hymn Book. Since that date, however, sev. other Congregational hymnals have been issued. The greatest nonever, sev. other Congregational hymnals have been issued. The greatest hymn-writer of Methodism is Charles Wesley, to whom sev. thousand H. of varung merit are asseibed. Many of them are among the most popular of H., both in the Church of kngland and among the various Wethodist bodies.

among the various Methodist bodies.

Mention may now be made of the H. known as carols. The word was originally applied not to a song, but to a dance. The song was later added, and the name included both. Finally the dance was dropped, and the song retained the name. Carols, secular and religious, both in the vernacular, were very popular during the

in and out of church. Their hist, is especially connected with the miracle and mystery plays. Odd scraps of Lat, which seemed to link these popular songs to the liturgical service of the church are frequently found in them. From the frequently found in them. From the Reformation to the nineteenth century we have almost an entire blank in the hist. of the carol. Then collections of modernised versions of the old carols were made and new ones were written. To this period belongs (look King Wenceslas, by J. M. Neale. The most popular collections are those by Chope and Woodward. See J. Julian, Dictionary of Hymnology, 1892 (last ed., 1907), to which this article is much indebted; J. M. Neale Hymns of the Eastern Chusch, 1863; J. Pauly. the Eastern Church, 1863; J. Pauly, the Eastern Church, 1863; J. Pauly, Hymni Breviarii Romani, 1868-70; C. A. G. Chevaller, Poésie liturgique du moyenâge, 1893; Norman, Hymnarium Salisburiense, 1851, and H. A. Danlel, Thesaurus Hymnologicus, 1853, with J. M. Nellel, die arthur franches Thesaurus Hymnologicus, 1853, with J. M. Neale's dissertation: Hastings, Encyclopaedia of Religion and Ethics (1914), vol. 7: F. J. Gillman, The Story of Our Hymns, 1921; W. Procter, The Story of Sacred Song, 1925; N. Mable, Popular Hymns and their Writers, 1948.

Hyndman, Horn; "3yers (1842-1921), Eng. socialist leader; b. in London; eldest son of John Beckles H., barrister, Educated privately, and graduated at Trinity College, Cambridge. He travelled widely and occupied birpself with learnal.

widely and occupied himself with Journalwidely and occupied himself with Journal-istic work. In 1881 he founded the Social Democratic Federation. He was always an active agitator for social romedies, and in 1887 was tried with John Burns and others at the Old Bailey in connection with W. End roots, but acquitted. In 1911 the Social Demo-cratic Federation was proved in the But cratic Federation was merged in the Brit. Socialist Party, with H. as chairman. This new party split into fragments during the First World War—most members joining the Communists; and in 1920, under H.'s auspices, the S.D.F. was revived. Among t his numerous pubs. are: Indian Policy and English Justice (1874). England for All (1881), Historical Basis of Socialism in England (1883), Socialism and Slavery (a reply to Bar, Socialism and Slavery (a reply to Borialism (1896). See R. T. Hyndman, of Socialism (1896). See R. T. Hyndman, The Last Years of Henry Mayers Hyndman, 1923.

Hyne, Charles John Cutcliffe Wright (1866-1941), Eng. novelist and traveller, b. at Bilbury, Gloucestershire, son of Rev. Charles Wright Noble H. Educated at Bradford Grammar School and Cambridge. Travelled widely in search of literary material. His most popular story is Adventures of Captain Kettle (1898), which Adventures of Capitain Nettic (1818), which appeared in the B indson Magnetine. Other stories include The Lost Continent (1900), Mr. Harrocks, Purser (1902), Thompson's Propress (1902), Red Herrings (1918), People and Places (1930), My Joyful Life (1935), Steamboatmen (1942) and various sequels to the Adventures of Capitain

tongue, to the muscles of which it gives attachment. It consists of a more or less rectangular body (bosihyat), and two pairs of unequal cornua or horns; the greater curve upwards and backwards; the smaller allers the in learning the consistency. the smaller, about ; in. in longth, are attached to the bashyal near its junctions with the great cornua.

Hvoscian and Scopolia carnolica, etc.

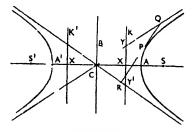
Hyoscyamine, poisonous crystalline al-kaloid, obtained from henbane (q.r.). When moist, it has a stupefying odour; when moist, it has a stuperying odour; it is used as a sedative and as a negleratic. It is found occurring with hypocine, is an alkaloid C₁₁, H₁O₁N. It is an optically active form of atropine, and has a mydratic action on the pupil of the every the state of 270 (11). Complements (270 (11))

Hypatia (c. 370-415), female philosopher and mathematician, daughter of Theon, b. in Alexandria. She lectured for a tune in her native city, and then became the head of the Neoplatonic school there. Her deep erudition, sound judgment, and the elecution gained for her the admiraone clocution gained for her the admiration of all her hearers, and her house became the resort of men of learning and distinction in Alexandria—amongst others, Orestes, the prefect of the city, with whom she was accused of being too intimate, and was barbarously put to death by a mob of savage Mitrian monks. For the little authentic knowledge about H., see Sociates, Hist. ech unstica, vil. 15. See also C. Kingsley, Hippatia (novel), 1853; R. Asuus, Hyprica in Tradition and Dichtung, 1907. Hyperesthesia, excessive sensibility of the nervous system, due to diseased con-

Hyperesthesia, excessive sensimity of the nervous system, due to diseased conditions: it is particularly characteristic of hysteria. The sensory nerves are extremely sensitive to the slightest impressions, and may react writent the presence of any external stimulus at all. It is sometimes induced by rheumatism, conting or any agents nervous compliant. sentica, or any acute nervous complaint. The treatment involves rer oval of the cause; local applications of heat, cold, or electricity often afford temporary relief.

Hyperbola, plane figure obtained by cutting a right circular cone by a plane inclined to the horizon at an angle greater than that of a generating line (see GRO-MURY). Hence it is known as a conic section. It is a symmetrical figure of section. two branches, each extending to infinity.
Any point on a H. is such that its distance from a fixed point, known as the jo us, always bears a constant ratio to its distance from a fixed straight line called Mr. Harracks, Purser (1902), Thompson's distance from a fixed straight line called Propress (1902), Red Herrings (1918), the directrix: and this ratio, which is People and Places (1930), My Joyful Life (1935), Steamboutmen (1942) and various sequels to the Adventures of Caplain Kettle which continued until 1938.

Hyold Bone, U-shaped bone lying immediately above the thyroid cartilage of the larynx, and near the root of the conjugate axis. C, the middle point of SS¹, is the centre, and A, A' are the vertices. The straight lines CY, CY' through the centre, known as asymptotes, gradually approach the curve, but actually only meet it at points infinitely distant If the tangent at any point P



HYPERBOLA

on the curve cut the asymptotes in Q and R, the area of the triangle CQR is the same for all positions of P An H is thus same for all positions of P. An H. Is thus sometimes defined as the envelope of the line which forms with two given straight lines a triangle of constant area. In ana lytical conics the equation of an H re ferred to its axes is $\frac{1}{a^3} - \frac{y^4}{b^2} - 1$, and referred to its asymptotes is $xy - e^x$. When the asymptotes are at right angles to one another, the H is called rectangular

Hyperbole (1 - eppoly over-hooting, excess) figure of rhetoric which hewithout deceiving 'It consists of exagger ated and extravagant statements used through excitement or to express strong through excitement or to express strong feeling and arrest the attention and not intended to be taken literally. Formal confilments are often Hs. They form the basis of many metaphors and occur frequently in high flown or poetic lan guage. The exact opposite is Litotes, or

guage Viciosis Hyperbolic Functions name given to a set of six functions whi nected with the six trigon metrical ratios Th hyperbolic ane is written sinh, and θ-م _ Pu may be defined by sinh a similarly the hyperbolic comme is given by A Le-B The remaining four cosh # are obtained from the equations $tanh \theta$ = cosh \theta coth \theta = \frac{\text{cosh} \theta}{\text{cosh} \theta} \text{sech \theta} cosh e and cosech = winh e Since sin 0 e\$i — e−8i mi cos 8 = w here – sınh θ CÓL year, cosh $\theta_i = e^{i\theta} + e^{-i\theta}$ = cosis e, and

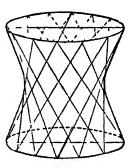
formulæ parallel with the ordinary trigo-nometrical formulæ can be deduced, e g — $Cosh^2\theta - sinh^2\theta - 1$

 $Sinh(\theta + \phi) = sinh \theta \cosh \phi + \cosh \theta$ sinh o

Sinh $2\theta = 2 \sinh \theta \cosh \theta$, (osh $2\theta = \cosh^2 \theta + \sinh^2 \theta$, etc.

Hyperboloid, name given in solid geo-metry to two surfaces belonging to the general class of controlds which in threedimensional analytical geometry are represented by equations of the second degree in r, y and z. The two forms of Hs are known as the H of one sheet (shown in the figure) and the H of two sheets. The simplest forms of their equations are respectively $\frac{x^1}{a^1} + \frac{y^4}{b^2} - \frac{z^2}{c^3}$ = 1 and $\frac{x^2}{a^2} - \frac{y^2}{b^2} - \frac{z^2}{a^2} = 1$ Both may be generated by a variable ellipse moving parallel to itself, and both are intersected by three mutually perpendicular

planes in two hyperbolas and one clipse The H of two sheets is formed by two distinct surfaces extending to infinity, and each is touched at infinity by an asymptotic cone, in the same way as the hyperbola has two branches and a pair of



a ymptotes. The H of one sheet is a ruled surface, and is such that through every point of it two straight lines, called generators may be drawn so as to lie wholly on the surface. It may also be defined as the locus of the intersection of corresponding planes of two homographic pencils of Tlanes

Hyperborean Mountains. URAL MOUNTAIN

Hyperbore: ((sk h neps peot, Hyperboreans, 'beyond the North wind'), a mythical race supposed by the Use to dwell in the fir N They enjoyed perpetual youth and lived in constant sunsting and my louded beautions. The petuli volth and lived in constant sunshine and unclouded bappiness. The Rhip ian Mis separated them from the rest of the world. The name was transferred to any people who lived far N. See Pindar, Pyth., x. 502. Herod iv., O. Crusius, 'Hyperboreer' in W. Roscher's Lexikon, 1864-97.

Hyperborea Dysprent are othe connection with the trigonometformiratios may be estab A series of

Hyperchlorhydria, we DYSPEPSIA.

Hyperides, or Hypereides (c 395-322) B.C.), Athenian orator, one of the ten of the Alexandrian canon, ranking next to Demosthenes After studying under Plato and Isocrates, he became an advocate at Athens II warmly supported the Athenian opposition to Macedon headed by Demosthenes and Lycurgus, and was a stanneh friend of the former until they fell unit over the case of Alex until they fell out over the case of Alex ander's absonding trasurer Halpains In the Laman War that followed, H shared in the deep at Crannon (322), and was captured and killed by Antipater at Agina His writings are witty, grace ful, and ironical, the best known being the ful, and fronkal, the bost known being the funeral oration over the dead in the Lamian War See eds of speeches and fragments by C Babington, 1853, and F Blass 1894, Sir F Kenyon (ed) Against thenogenes, and Against Philip pides, 1493 and Oxford Text, 1907, also Sir R. Jobb, Attic Orators, ii, 1850 Hyperion, in 6k mythology, a litin son of Unions and Gira (fleaven and Farth), father of Helios Seleno and I os (Sin, Moon, and Dawn) The name is 180 used by toets as a patronym'r for the

also used by poets as a patronymic for the sun god himself, and honce the attribute of beauty is a mire I with the name See the novel by Holderlin, 1797-99 and

the opic by Keats.

Hyperite, name which has been given at various times to different rocks allied to dishuse and diorite and containing plagioclase, iron ores, biotite, hypersthem, etc. It is especially abundant in the Rocks Mis the Andes, Japan, lax and the Philippinines, and may be observed in the volumes of Hungary and the old volcanic systems of the Take Dist, N Wiles, the Ochils, etc. whilst it Issues from the more or less active volcanoes of La Southère of St. Vincent Krakaton, and Pelce in Martinique

Hypermetropia, condition of long sight caused when the come is too flattened or the eyeball too short - 19 & result rays of light, instead of converging to a focus on the retina, are brought to a focus behind the membranc H is corrected by the use

of spectacles with convex lenses

Hypermnestra, in the mythology, one
of the daughters of Danaus and wife of

Hypersthene rock forming mineral consisting of silicates of tron and macrosium. Hyphone, hypnotic or soporlife drug sisting of silicates of tron and macrosium. Hyphone, hypnotic or soporlife drug sisting of silicates of trong to the process of the silicates of the control of the silicates of the control of the silicates of the differs from the other members of the rende by the action of active chloride upon outhorhombic series of pyroxenes in leavene in the resence of anhydrous possessing more from

Hyperpyrexia, see under Fixia Hypersthemits, rock whose chief con stituent is hypersthene (q v) it is a member of the pyroximite group and different species are named according to It 14 n the other minerals present H4 are of igneous origin and occur in great abundance in the N. of Scotland, New Zealand Saxony, E. America, and elsewhere

largement of the gland is liable to occur, progressing to the formation of a large tumour or gottre, which may hang down as far as the breast but the secretion, thyroxin, of the gland is deficient, owing to a shortage of lodine (an essential constituent of thyroxin) in drinking water A variety known as exophthalmic goitre, from a protrusion of the eyeballs which is characterr tre of the disease, appears to be associat d with increased activity of the thyroid gland. The symptoms, which include pulpitation of the heart, raised basal metaboli rate, and excessive nervous pritability, are similar to those produced by an overdose of thyroid extract, and the treatment of the disease includes partial removal of the thyroid gland (thyroidecand the thyroid giand (talyfolder tony) by singleal means, or the use of anti thyroid drugs such as thiouracil. The opposite condition, hypothyroidism or underactivity of the thyroid, causes cretinism in infants and myxolelema in idults. See further under Gottref.

Hypertrophy, abnormal growth of an organ or tissue, generally due to increased nutrition, e.g. well developed muscle, Protective hypertrophy occurs in the formation of a callus or hard covering, or in the case of local super-development of ti sue in the neighbourhood of an embedded bullet or tumou. H of the heart (q 1) occurs as the result of the heart's effect to increase its efficiency which has been otherwise impaired, frequently a discased condition of one organ causes H m mother, as in the case of disease of one kidney. The condition may be either corgenital or ac jured, and may be accompinted by an increase in the number of panied by an increase in the number of constituents of any particular tissue (acmplasia), and it may occur without my increase in bulk of the complete ouran Other examples of H are observe, gotto (see Hyperthermopea), (c) hantiusis. See also Yropyil.

Hypnerotomachia, fantastic work probably witten by I processed (c) onne (e)

respict to the pseudons miles of the probability witten by I runes so Colonna (c. 144-1-27) under the pseudons m' Polithius' (Venice, 1449) in 'in caronio' I it produced later by the Aldine Press. It contains fables, architectural and a storical antiquities and teaches that all property of the propert of the daughters of Danaus and wife of human passions are only freams. See Lynceus, alone of the daughters of Danaus and ed 1545 Fing trans 192, A Lang, she spared her husband (d. (reproduction in the amile) 1904.

dummum chloride

Hypnoanalysis, e Hipporism, Uses Hypnos, see South

rlypnotics are u d to induce sleep by di or by producin' temporary amemia f the brain, the latter being induced in natural sleet. This warmth applied to the feet, a were both, a full meal, or a mona drugs, by diverting the blood from Hyperthyroidea, a condition of the body the brain, act as H. Drugs which dull the caused by exceeding activity of the high cells are known as narcotics (q.v.), thyroid gland I nectain district, such and nother H. nor narcotic drugs should as the Alpine regions of France, an on- be used except on medical advice.

Hypnotism, condition of artificially induced sleep, or trance resembling sleep, in which a patient is rendered more sus-ceptible to suggestion. It includes the series of phenomena which from time to time have been termed animal magnetism, mesmerism, induced somnambulism, ody-

lic force, etc.

History. From time immemorial forms
been known. e g of H. appear to have been known, eq or H. appear to have been known, e.g. certain states of ecstany which are more or less self-induced in types of fanatics are related to H., and while affected, the individuals appear capable of resisting what would be pain and fatigue under the control of the c normal circumstances. Definite investigations of the state have been made since the sixteenth century: Paracelsus at the ond of that century estab. to his own satisfaction the existence of a sympathetic system between the human and the stars and other objects. Gassner, a Rom. Catholic priest of Swabia, in the middle of the eighteenth century stated that disease was due to demoniacal possession, and that a supernatural power with which he claimed to be invested, could be used to expel all forms of disease. In 1774 Mesmer, a Vienneso physician, gained a large measure of success in the treatment a large measure of success in the treatment of certain disorders. He proceeded to Paris in 1778, and by continued successes he gained a large following, and his suggestion of the actual transference of a 'magnetic fluid' continued in vogue until within quite recent times. His treatment within quite recent times. The treatment onecessitated much apparatus, magnets, connecting whrea, etc., with usually a central tub of water or other liquid round which the patients were seated. A pupil, Marquis de Puységar, m 1780, proved that the accessory magnets, etc., were un-necessary, and the claims of 'mesmerism' became so insistent that a Fr. commission was appointed in 17% to investigate the matter fully. Their report was un-favourable, and this, coupled with its later association with the notorious Cagliostro, brought it into disrepute. 1831 Bertrand estab the affinity of magnetic sleep to somnambulism, and suggested its use as a therapeutic agency, and a second Fr. commission of that year reported rather more favourably. In 1841 Dr. Braid, a Manchester physician, discovered that a subject could be endiscovered that a subject could be en-tranced by gazing at a bright object, and he suggested the name 'hypnotism,' from tik. 1710c, sleep. On the Continent schools of H. were e-tab. under the direction of the distinguished physiologist, direction of the distinguished physiologist, Richet of France, and such physicians as Charcot (Salpātrière), Liebault, Bernheim, Prever and Heldenhain. In Britain Dr Elliotson (editor of Zoist) supported II., and his advocacy resulted in his being driven out of the profession. But the discovery of ghloroform in 1818 meant the prosession of an angesthetic of wider the possession of an anathetic of wider the possession of an ann-thelic of wider application and more certain results, and, in consequence, H. tended to become neglected. In 1882 Mr. Gurney carried out investigations in the subject, and the Brit. Medical Association, after a long period of doubt and vaciliation, reported favourably on its use in 1892. The

names of Drs. Bramwell and Tuckey are associated with valuable work, and in 1907 the Medical Society for the Study of Suggestive Therapeutics was founded.

Wethods. The usual methods employed to bring about the hypnotic condition are either (a) peripheral, as in the gazing at a bright object so placed as to cause some slight muscular eve strain, flashing of mirrors, slow, monotonous 'mesureric' passes, and even the ticking of a watch in very sensitive persons; (b) central stimulations as by verbal suggestions. Frequently there is a combination of these methods (Braid and Bernheim) as when the operator places a bright object slightly above the level of the subject's eve, and suggests to him the idea of sleep, at the same time making hand passes petere the face. It is found in practice that about 90 per cent of persons are sus-ceptible to H., and the proportion always appears to be higher in individuals trained to obey, e.g. soldiers, salors, school children, etc., than in others, though it bears little relation to age, sex, or intellibears little relation to age, sex, or intili-gence. Liebault had some 1700 successes in 1756 persons treated. Bramwell had but two failures in his first 500 subjects, and no less than 240 became sommam-bules. The persons who give exhibitions of H. on the stage are in reality not specially gifted. It is quite possible for a psychatrist to induce equally profound hypnosis, but lighter stages are more suitable for purposes of healing. Many animals, e.g. cats. dogs, lizards, croco-diles, etc. can be hypnotised. diles, etc. can be hypnotised.

There are three

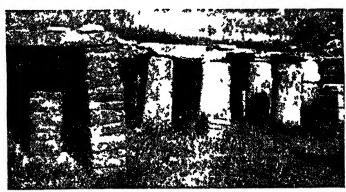
Symptoms. There are three well marked stages of hypnosis: (1), slight, in which the voluntary muscles are affected, without loss of consciousness in the patient and without amnesia on re turning to the norm il condition ; (?), deep, in which the symptoms very greatly; the sensory system is affected, there may be tonic contractures of the muscles (induced catalepsy of Heidenhain), or marked flexibility; there is frequently an increase of muscular strength, or a maintenance of an ankward attitude without muscular fatigue, there may be paralysis of one side, or one organ, by open or overt sug gestion, or suggestion may be used to cance alterations of sensation. Visible symptoms include: change in pulse beat and in rate of respiration, dilated pupils, drooped cyclids, protriding evelodis, and frequently flushed face and highly increased perspiration. This stage is usually marked by amnesia on waking, though a second hypnotic state will generally contain memories of the first. No satisfactory explanation has been given of post-hypnotic suggestion by which the subject can be made to carry out some action (not foreign to his nature) after the lapse of a given interval, as for example, the hypothed person may be told to write his name, note the time, purchase some article, etc., after the expiration of, say, 5000 mins,, and although on waking be may have no cognition of the command, yet punctually to time he will endeavour to carry out the suggestion, usually doing

claims of its early exponents. There is no doubt that II can be made to yield sleep without the use of drugs, which of tiself is a valuable property, and during this sleep the subject is peculiarly open to suggestion so that definite advantage follows its use in cases of blindness, loss of speech, hysterical paralysis, etc. Pain can be relieved, e.g. during childbirth or surgical operations (see above). Its use Its uso

so with some more or less plausible explanation. The third stage is somnambulism, in which the subject rarely makes any response to suggestions this conditions can seldom be reached during the first experiments with a new subject Uses—Although H is extensively used, yet the trutment does not fulfil all the claims of its early exponents. There is no doubt that II can be made to yield sheep without the use of drugs, which of 1918. 1918

Hypo, popular name for the chemical substance used in developing photographic nightives, commonly known as hyposulphite of soda, the correct name is thiosulphate of soda

Hypocaust, arrangement used by the Rome for heating their baths and villas



Journal of Hellense Studies

A HILOULUST

has been treested as an educational Their mace (hypocausis) was placed below agent even in the Centineut, for the resulting room to be heated and the H was a somany, muphinoments, etc. It sometimes positic by H to produce alteration in unconscious attitudes under lying psych legical amptoms (with dis appearan c of the symptoms) and mental analysis may often be expedited by th use of H (Hypn) in dys(s) I vaggerated tatements have been ear ulated as to the extent of central consequent on H and experim of show that it is extremely difficult in n any asset impossible to in duce an individual to carry our actions which are normally abhoreent to bus char acter, i. Il cannot make a normal indi-vidual carry out a climinal can paign, though an unb danced or permetous mind may be rendered criminal
Theories - Numerous

theories been advanced but the nature of the H state is still uncertain. It has been con-sidered (amongst other theories) to be (1) an abnormal state of the bruin, (2) due to a temporary abolition of some cortical functions. (i) a psychoneurosis, allied to I trade

the reom to be heated and the H was a blow space under the 'caldainm,' where formation of circi mais as it has been been by low space under the 'cald minn,' where claimed that considerable improvements it has all under the walls and the new have followed its appliention in dip list it under cound the walls and to other is by means of pites and passages nerh)

> Hypochlorous A id (II(IO) is only wn in aqueous solution and may be It ined by distilling bleaching powder with illute nitric 1 if or by dissolving ill rine monoxite in water. The solu ti n obtained his a peculiar 'chlorous' il, and strong blacking properties, the being really resolved into hydro me acid and overen Its salts, the ne acid and oxygen by chlorites, are almost unknown in the r state, and are obtained, together will the chlorides then chlorine is passed n to a cold solution of the hydroxide of an its it or alkaline earth. Bleaching powder (11) or 'chloride of lime,' is prepared by 11 ing chi rine, or r slaked lime, and consists of a maxime of calcium hy por hloride. the Ca(OCI), 4H₂O with basic calcium chloride, Ca(1, Ca(OH)₂, H₂O—roughly equivalent to Cy(Ot DCI It is used in luge quantities for bleaching in the textile With small quantities of acid.

Eau de Javelle, formerly much used for bleaching, consists of a solution of potassium chloride, KCL, and potassium hypo-oblorite, KClO.

Hypochondriasis, name obtained by its supposed connection with the hypochondria regions of the abdomen (q.r.), a mental illness causing disorder of digestive and bilary, and often other, functions. It is characterised by palpitations, extreme sensibility, morbid feelings that simulate disease, and great uneasiness about the health. In extreme cases it develops into melancholia. It is more frequently met with amongst the rich than the poor, and the best cure consists in physical and mental exercise, and interests outside oneself, or psychiatric treatment in severe cases.

Hypodermic Injection (ὑπό, under, δερμα, skin), introduction of a drug be neath the skin. It is effected by means of a hypodermic syringe, which is armed with a sharp hollow needle, so that the with a snarp notion needle, so that the tissues underlying the skin can be reached without much inconvenience to the patient. The advantages of H. I. are that a drug can be introduced more directly to the tissues than by way of the directly to the disates than by way of the stomach, the quantity required is there-fore less, the treatment can be made local if required, and the operations of a possibly deranged stomach are not further interfered with. The method is used chiefly in connection with the group of drugs known as alkaloids, notably morphia and cocaine.

Hypogeum, underground chamber anciently used as a burial place, storage room, or dwelling place. In archaeology room, or dwelling place. In archaeology the term is restricted to the first of these. various types are found: dug from the earth; cut from rock, as were the Rom. oatacombs; or constructed of masonry,

as at Mycone.

Hyponitrous Acid (H.N.().), colourles, crystalline substance, soluble in water, readily decomposing (often explosively) into nitrous oxide and water. Its salts, the hyponitrites, are formed by reduction of the nitrites by means of sodium amai-The silver salt is a yellow insoluble gain.

substance.

Hypophosphorous Acid (H₁l'O₁), colour-less cry-tailine compound, melting point 27° C., formed by the action of subpuric acid on the barium salt, which is obtained by boiling phosphorous with a solution of baryta. On heating strongly, II. A. is decomposed into orthophosphoric acid and gaseous phosphoretted hydrogon. It is a powerful reducing agent, precipitating gold, silver, and mercury in the metallic state, and copper in the form of its hydride, from solutions of their saits. The hypophosphites are largely used in medicine as tonics.

Hypophyll, see BRACT.

Hypostasis (unogradus, subsistence), Gk. term meaning substantial existence, much used in the Trinitarian controversies of the fourth and fifth centuries. At first used as equivalent to ovoia (divine essence), its meaning in theology has

H. A. is set free from hypo-chlorites, and changed considerably. It was regarded with larger quantities chlorine is evolved. as synonymous with $\pi\rho\sigma\sigma\omega\sigma\sigma\nu$ or persona as synonymous with πρόσωπου or persona (person) at the council of Alexandria, A.D. 362, and is used to denote the distinct A.D. 302, and is used to denote the distinct personal existence of each Person in the Truitv. Sec G. P. Fisher, History of Christian Doctrine, 1896; C. G. Harnack, The History of Dogma (iv.), 1898.

Hyposulphuric of soda, see Hyro.

Hyposulphuric Acid, obtained by dissolving zine in a solution of acid sodium whights. It is a strong blooching areast

sulphite. It is a strong bleaching agent.

Hypothec, in Scots law, a security over any part of a debtor's property, the property being allowed to remain in the possession of the debtor; hence distinct from both a mortgage and a pledge. The idea is borrowed directly from civil law (q.r.), but in practice Scots law allows of few IIs. Hs. are either implied (legal Hs.) or based upon express contract (conventional Hs.). The latter class is restricted to bottomry (q.r.), and respondentia (q.r.) bonds. The former includes the Hs. of (a) a landlord over movables (invecta et illula) brought on to the leased premises, for rent current and due (but not for arrears); over produce and perhaps machinery and implements; for royalties payable under a lease of minerals; and over crops for current feu duties due in respect of agric. land; (b) a law agont over his client's writs and title deeds, for his expenses (properly a lien), and (c) of seamen, who have a tacit H. over the ship, and the freight due to the shipowner. for their wages; of a shipowner over the cargo for freight due, and of cargo-owners over the ship for loss by improper owners over the snip for loss by improper stowage. Generally speaking, the creditor enforces his security by getting the subject of the II. assigned to him. So Abbot, Shipping (14th ed.); (Hoag and Irvine, Rights in Security.

Hypothesis (vnotices, foundation), in general, a supposition, proposition, or principle assumed as true for the purpose of argument, in order to draw concusions or inferences for proof of some point in question, or to account for some occurrence. In science a conjecture or tentative theory adopted provisionally as a conjecture of the confidence o guide in investigating phonomena. If this conjecture is found after careful tests and examination entirely satisfactory in explaining the phonomena in accordance with known facts and principles, it is accepted as a scientific theory. See E. accepted as a scientific theory. See E. Naville, La logique de l'hypothèse, 1880; Logic text-books by W. Jevons, B. Bosanquet, H. W. Joseph, W. Jevons, Principles of Science, 1874; H. Poincaré, La Science et l'hypothèse, 1902 (trans. 1903). Hypsipyle, daughter of Thoas of Lemnos, in Gk. legend. The saved her father when the women of the 1st slow all the rest of the men. When the Acqueryle landed

When the Argonauts landed of the men. When the Argonauts landed and united with the Lemman women, H. bore Jason twin sons. Driven from Lemnos when her fathers' escape was discovered, she became the nurse of Opheltes, son of King Lyourgus of Arcadia. While directing the heroes of the slege of Thebes to a spring in the Nemean forest, she left her charge, who was killed by a sorpent, The funeral games instituted for Opheltes were the origin of the Nemean games

Hyracotherium, name of the best known form of Hyracotheriid t, a family of exime t ungulate mainmals belonging to the order Perissodactyla and considered to be the ancestor of the horse. The fossil form is confined to the Locace strata of Europe and \ America and shows a small animal 1 ft or so in length, with 1 complete dentity in a well marked corn-cold process on the shoulder blude, four digits on the forchinds and three on the hind limbs, and orbits not enclosed by bone the radius and ulna are separate as also are the tibu and fibula

Hyrax, genetic name of certain and topices of man mala forming the order Hydricolder, I regard is an arterative term. The eminutes are popularly known as concy and somewhat is emble rodents in appearance owing to the long, rodents in appearance owing to the long, curved, front tecth, adupted to grawing, the short errs and reduced that in the structure of the molar teeth, however they are notice the impulate. Then bodies are covered with short, close fur, particularly colored with short, close fur, uniformly coloured, and the sharply pointed snout is split, the digit are furnished with a take exception of the middle too of cich hind foot which the manic for of the limit for when has a long curved claw. H springer, the cones of the Libbs, ranges over Syra Palestine, and Araris it is of a duly spot on fix no colour, with a small over spot on the back, it is noted for its warrances and cannot be eaught in traps. the nest is of dried grass and far in which the young he build like those of a mouse H capenses the not rabbit daman or klip das, i confined to Cape Prov \ntal

Hyran a, inct dist of Persia S and S I of the eistin (II i anuir Mars) spuried from Futha by the Sarith Wis (S I) with Medicon W. It comes ponded to A ti but ind Mizandrian

Hyroanus, inne of two Jewi h high Dirins and is soint times error ously con priests and jein es of the Hismonian in ed with Z roaster statron (V shtaspa) family (1) I ha (Ichanan) Hyroanus i Hysteria That term of neuroccu illness (c 17)-101 B () son of Simon M a cabe us carly won time estimates the Syrians under tendebaus. He become high pinest in any mon of Judaa (13) and founded the Jewish monarchy who continued in his fundy until Herod served his commendation was much waifine during in it it is but intelly with complete accur his reign. At first a Phonese ho later in visit of the syngton are psychogenic joined the faults of the Saddness Section the first and few patients Il Gultz, Gesch chle der Tulen, h, ni 1534-75, 1 - huter teschichte de nidischen Volkes ir Zeit Christi i 1871 (trans. 18 10).

(2) Hyrcanus II, grandson of above, high piest (c. 7) 10 B c.) His brother Aristobulus disputed the throne with him arisonnum arisonnum and arisonnum ar executed on a charge of treason (30) See I Jost, Geschichte des Judenthums und et ner Sekten, 1, 1857-59, A. Holtzmann, Judenthum und Christenthum

Hyssop, or Hyssopus officinalis, species of Labiate which forms a genus inited and is a native of kurope, Asia, and the Mcditerrinean shores it is a hardy plant, with stems which are shrubby near the ground but herbaccous above.



1085 £ U

flewers are blue and were formerly used in medicine when dried, the leaves are in mediume when arrea, the least a war of the result, and the used in salada and in the manuf of absinthe, the whole that is butter and area wire. The herb int a learn scriptural writings is probably a species of Marjoram the Original which is found plentitully in I ales tin The twigs formed into a bunch with a cd is a sprinkli (1 v xi 22

Hystispes, nam of an occurring in lesim this the fith of Danus I 1486 B.) was onimed in I was a t ber of the toy if house of the Acha icni (He was governor or sitrap of I i ia under Cambysis (d 21) and

Hysteria I hat form of neurone illnesm win h organic discuss 5 im lated for the sake of some gern win h the illness times modering megablem, fulfilling in wish or satisfy its measure either mr dity or in phace y The symptoms dinost any or, in diseas; may be sufficient i il knowledge to reproduce sympton for organic illness, with fidelity 1 example hysterical I s of kin sensut it is often confined to te glove and sto ling area, a distribu n which does not correspond to the citemical arian ment of cutaneous stes. As medical knowledge spreads, grosser hystered a unifestations such 111165 the, wide-pread | maly-calete grow less t quent, and less definite complaints on has heads, her in i dizziness are more fi quently encountered Loss of memory is often hystorical and patients may winder from home in trance-like states The patient is never clearly aware of the motive underlying his illness, but the

extent of the self-deception varies and all | transitions between hysterical reactions

and malingering occur.

Hysterical reactions are more common in women than in men and often occur at puberty and in adolescence. They may follow accident, particularly where there is a question of compensation and where the underlying motive, unrecog-nised by the patient, is financial gain. Since the symptoms are psychogenic, treatment is by psychotherapy, which may be given in various ways. Individual hysterical symptoms can often be removed by suggestion (often effectively given with the help of hypnosis) but unless the underlying psychological problems are tackled, or the environmental stress diminishes similar of different symptoms are likely to recur. It may be necessary to alter a patient's environment, as for example by arranging for a child to go to a residential school, away from over-solicitous and fussy parents. Hysterical symptoms may clear up spontaneously when the patient's problems are solved. e.g., by the satisfactory settlement of a year. The beach and golf-course claim for compensation. In many cases line, but the sea's encrotehments manipulation of the environment is not destroyed the harbour. Pop. 8109.

enough, and a thorough investigation of the patient's life becomes necessary with the aim of helping him to understand and solve the conflicts or problems for which his hysterical symptoms are an unsatisfactory solution. See also Hypnotism; PSYCHIATRY: PSYCHOANALYSIS, See D.

K. Henderson and R. D. Gillespie, A tertbook of Psychiatry 6th ed.) 1944.

The term 'Hysterics' is not synonymous with H., but is a general term for uncontrolled emotional outboosts, often with screaming, solbling, laughing, strug-gling etc. Persons who have such out bursts may or may not be hysterical in the technical meaning described above.

Hythe (A.-S. port, haven), seaside tn. and resort of Kent. Parland, one of the Cinque Ports, on the S. Coast 4 fm. W. of Polke-tone. It is in the diocese of Canterbury and on the S. Region railway. The mrkt-house was rebuilt in 1791 and an old cruciform church—st. Leonard's—has been restored. The Brit. Army has been restored. The Brit. Army School of Musketry (now the School of Small Arms) has been here for many yeur. The beach and goff-course are tine, but the sea's encrotehaents have I, ninth letter of the Eng alphabet, 1901 called in Ck tota and in Senitic languages secon yodh In the North Semite alphabets and in early 6k it resembled a Z, later the symbol was straightened to 1. In the the symbol was straightened to I square field script, the part of the modern field script, the part of the modern field alphabet, the symbol came to be written with 1 very small sign, hence our words 'jot (f Mitthew, v 15) and jottings' httle notes. In early medical field of the symbol state of the symbol state of the symbol state of the symbol state of the symbol state. val Lat , was first written with a dot for sike of distinction with m the semite alphabets which were and still are consonantal scripts, it had the consonant value of y as in yet but in Gk and in its descendants it had the yowel sound y in I at it also denoted vower sound? In 1 nt it also denoted the conson int pronounced y although in 1 ng it received the value of j as in judge others in hid two sound the long or sliter, the former te sembling the sound of j as in machine. and in the continent il a often written in leng ec is in meet. The O I short is (i) has remained it it tically unchanged in sound of O.1 sitton New 1 sit. The O.F. Du. 1 (1) which had the continental value i (i maning in machine) was later dighthoughed and in sixteenth century 1888 is often viitten ex. of O.F.

to New 1 life mine

Iacchus (lex) solemn title of Bic

chus u ed in the 1 kusimen mysteries. A the son of Demeter has usually distin guished from the old 1 Dionysus en of He was a divinity peculiar to

Athen-See FILLSINIA

Tambie Verse, in records is up hed twees constitute to foot cilled in aumbies of two still les of which the in the short and the conditional lines. nambus of twe still less of when the mean is short and the conditing (7). It is supposed to have been invented by Archilochus. It is juit uluis suitel to the Fing long ive with tills naturally into short in Hong sall it less. It has perhaps most frequently 1 on employed in blank control of the control of It is rhythm depending largely upon the casmi which full in the third or fourth

lamblichus, or Jamblichus Charcidenus (1) Syrun Scoplatonic philosopher of the third and fourth centuries (c. 283 c. 330 (D) But few of his philosophical and mathematical works are extract. The Life of Pythag ras and I rhortation to Philosophy were ed by F kiessling [1843], 1815), A Nauck (1881), II Pistelli (1888-1894), N Feeta (1891), G Parthey (1887-F Ast (1817) and J k Fries (1790) also ed selections from his works. See E. Zallow Philosophys. dec Greechen iii. 1890.

1901 (2) a Syrian Gk. writer of the second century AD, who flourished under Frajan Ho was author of Baghauta, describing the adventures of the lovers Rhodine and Smonis. Photius gives an epitoine of the romance which is itself not cytinn of the romance which is itself not cytinn (see Hibliotheca, chapter zelv). See A Chassang, Historie du Roman dans l'antiquité, 1962, T. Whittaker, The Neo-Hulmist, 1901 M. de Wulf, History of Verlieral, Philosophy (trans. by E. C. Michael 1998).

Nesconger 1926

Japetus, Titan, of Gk mythology, the son of Utanus and Gua He was the father of Atlas and Prometheus, and the gridithr of Deucalion, and was accordingly regarded as the ancestor of the human race. He revolted against the new order under Zeus, and was consequently imprisoned in Lartarus.

lapetus, cighth satellite of Saturn, disecvered by Cassini in 1671 It has the peculiarity of always appearing brighter when seen to the Woof the planet than when seen to the E

lapygia, in anct. geography, the name upplied by the Gks to Messapia or Apulia, S E Italy

lasi, see JASAS

judge, and Hausa troops are estab here. It is a centre of the cocoa industry and some thirty co operative societies of native

to ot farmers are now affiliated to the lbid in Union. Pop (estimate) 385,000.

(k. Meek, The Northern Iribes of pria, 1921. H. L. Ward Prico, Land I nure in the Foruba Prima is, 1931. und Lord Hailey, in Africa: Survey,

lbagué, or San Bonifacio de Ibague, cap.

cf lolima dept., (olombia 60 m. W. of
B gota, in a rich agrid dist. There are
with springs and sulphur and silver
mines mar. Guataquisito, on the Magldena is its port. It has a rail connecconstruction between I and Armema and Buenaventura Pop 62,000 Ibajay, to on the Coast of Panay Is,

Phillipines, in Capit prov It is a military station near the mouth of the Rio de thing, which rises in Bacalan Mt and thews N W and N to the sea. Ambor is found near the point of Potol

about 18,000.

Ibañez, Vicente Blasco (1867-1928), Sp. novelist and politicism, was b in Valencia. An ardent revolutionary reformer and ed stections from his works See E An artient revolutionary reformer and E. Vacherot. Historie critique de l'école d'Alexandrie, ii , 1851; A S Chaignet Instorie de la psychologie des Grees, v., Sp. Parliament. So disliked did he make 1893; T. Whittaker, The Neo-Platonists, liminself there that, solely to displace him, law that gave protection to members of the Cortes. At one time he founded, and for five years managed, an Amer. colony. The latter part of his life he spent in Paris, the centre of a revolutionary and anti-

Royalist group.

His earlier novels are by many considered his best—. 1rroz y Tartana (1891), Flor de Mayo (1895), La Barranca (1894), Cañas y Barro (1902), and Entre Naranos (1902). They are realistic in treatment, and describe lite in the tus., farms, and and describe life in the thst, farms, and fishing vils. of Valencia; they are full of life, colour, and brute force. His next group of novels—La Catadral (1903; trans. 1909), El Intruso (1904), La Bodega (1905), and La Horda (1905)—are political and sociological. In his third group—La Maja Dèsnuda Sangre y Arena (1908; Eng. trans. as Blood and Sand, 1913), Los Muerlos Mandan (1909), and Luna Benamor—he returns once more to his original style, but does not describe the original style, but does not describe the original style, but does not usering the same locality. His Four Horsemen of the Apocalypse (1916), was an immense suc-cess abroad, both as a novel and as a film. His later books were Marc Nostrum (1918), La Turras de Todos (1922), Alfonso XIII, Unmasked (192), and A Norelist's Tour of the World (1927). See C. Pitollet, Vicente Blasco Books, ses romans et le mann de same 1921. roman de sa rie, 1921.

Ibarra, cap. of limbabura prov., Ecuador, S. America, about 50 m. N.N.E. of Quito. Founded in 1606, it was almost destroyed by carthquake in 1868. It is a bishop's see, and has woollen and cotton

blshop's see, and has woollen and cotton mills. It stands at the N. foot of Imbabura volcano. A lailway connects I. with Quito. Pop. about 7000.

Ibbetson, Julius Caesar (1759-1817), Eng. painter. Though not of the first rank, he produced a few works of charm, and individuality, as in 'The Ascent of George Beggin in Lunardi's Balloon.'

Ibea, see KENIA COLONY AND PROTECTORATE.

TECTORATE.

Iberia: (1) Gk. name for Spain, probably derived from Iberus, the Ebro. (2) Name by which Georgia in the Caucasus was known in and times.

Iberian Sea. name given to the Mediterranean between Spain and the N. African

coast of Morocco.

lberis, see CANDYTUFT.

Iberis, see CANDYTUFT.

Iberville, Pierre le Moyne, Sieur d'
(1661 1706), Fr.-Canadian naval and
military commander, h. at Montrest, He took part in the destruction of Schenec-tady (1690). In 1699 he founded Fort Biloxi (afterwards Mobile) at the mouth of the Mississippi in Biloxi Bay, and planted a Fr. colony there.

Ibox, name of sev. species of Capra, a

genus of liovides, which includes the guats. The Alpine ibex, Stanbok, or bouquetin, was formerly abundant in Europe, but it was formerly annungant in surope, but is now rare, and almost extinct through hunting. ('. iber, as it is technically called, is larger than common geats, with no beard, long, thirk horns curving backwards, and brown hair. It lives on shrubs and lichens and such vegetation as it can extraordinary distances.

attempts were made to dispense with the butter and cheese are made, the hair is clipped and made into ropes, the horns are used for handles, and the skin is dressed and made into shoes and gloves,



SPANISH IBEX

The I. is very destructive to vegetation and especially to vines, and on this account was freely offered in sacrifice to Bacchus C. pyrenawa, Sp. I., found in the mis, of Spain and Portugal, is characterised by the short black heard and dark shoulder strap.

Thiqui, or Ibicui, port in Argentina, S. America, is near the confluence of the Urnguay and Parana.

lbis, generic name of sev. members of Ibididic, wading birds related to the storks. They have large bodies with long curved bills, rather blunt at the end, with the



upper mandible grooved, long necks and legs, and generally black and white plumage. The most famous species, I. atthupica (or religiosa), the sacred i., was formerly worshipped by the Egyptians. It always appeared in Egypt at the rise of the Nils and management of the Nils and management of the Nils and management of the Nils and management. obtain on the hill-sides, and leaps for It always appeared in keypt at the rise of extraordinary distances. From the milk the Nile, and was supposed to preserve

the country from plagues and serpents. It could not live out of Egypt, and there it was zealously preserved in temples. Numerous munmified remains of ibises have been found at Thebes and Memphis, wrapped in linen in the ordinary way. I (or *Eudocimus, alba*, the white I., is a pure white species found in Florida. *I.* (or Endocimus) ruber, the scarlet 1., an Amer. species, is brilliant scarlet with a few black patches. I. fulcincllus, an African species sometimes strays to Britain and N. America.

Iblis, see EBLIS.
Ibn Batûta, or Abu Abdullah Mohammed (1304-78), Arab traveller, b. in Tangier. He traversed Persia, Mesopotamia, Arabia, E. African coast, Asia Minor, the shores of the Caspian, Bokhara, Afghanistan, and India, China, Sumatra, and S. Spain. On his return he settled at Fez.

Spain. On his return he settled at Fez, and wrote a graphie, account of his adventures, valuable for their shrewd, original observations. It was trans. Into Eng. by S. Lee (1829), and into Fr. by M. Defremery and Dr. Sanguinetti (1859). He died at Fez, Morocco. Sec H. A. B. Gibb, The Tracels of the Battlet, 1929.

Ibn Ezra, or Abraham ben Meir ibn Ezra (192-1167), lewish scholar and Bible commentator, t. at Toledo. He wrote a Heb. grammar, numerous poems used in the Jewish thurgy, a work on Jewish philosophy, and important commentaties on the O.T. He lectured on astronomy and theology. See R. Levy, The Astrological Warks of the Esra, 1927. Ibn Gabirol, see Avickbiron, Salomon

Ibn Gabirol, see AVICEBRON, SALOMON

BEN GABIROL.

lbn Haukai, Mohammed (d. 976) Arabian geographer and traveller of the tenth century, b. at Bagdad. He pub. a Book of Roads and Kingdoms, contaming an instruction account of an instructive account of Islamic lands accompanied by a map. A MS, copy is in the Bodleian Library.

Ibn Khallikan Abu'l Abbas Ahmed (1211-82), Atabian historian and scholar, b. at Arbela. He travelled in Syria and Egypt, and held the others of cadi at rogypt, and ned the offices of cold at Calco, grand cad at Damaseus, and prof. in one of the colleges, Cairo. He was a poet and compiler. His prin, work is a biographical dictionary, Deaths of Emi-neil Men.

Ibn Sa'ud, king of the Hejaz.

SA'UD, ABDUL ASIZ IBN.
Ibn Tofail, Abu Bakr Mahommed ibn
Abdul Malik (d. 1188), Arabian philosopher, b. at the beginning of the twelfth century, at Guadis in Spain. His chief work was a philosophical romance, Hah ibn Yokhdan, trans. into Eug. by Pecock (1674) and by Ockley (1708).

Ibn Zohar, see AVENZOAR. ibo, scaport in Portuguese E. Africa on one of the Querimba Is. Exports ivory, rubber, and wax.

Ibo, densely populated country of S. Igoria. Also the name of the language Nigeria. spoken -a negro sudanic tongue. Among spoken—a negrosalamic tongue. Allong tho who who are sincequently stong the hot brospeaking tribes the earth-goddes, Europo into fury. His earliest work-Ala, is regarded as 'the unseen president of the community.' In every vil. she was inspired by his reading of Saliust and has her shrine, and her priests, as guardicero for the examination at Christiania lans of morality and the public peace, Univ. Whilst continuing his studies

have political and judicial functions. The land cannot give a living to so large a pop., and large numbers depend on fishing and various trades. Since 1943 the I. of the Udi Div. of Onitsha Prov. have improved their amenities through commun-

ity development by voluntary labour. See Lord Hailey, An African Surrey, 1938.

Ibrahim Pasha (1789–1818), Egyptian vicerov, b. at Cavalla, Rumelia, was the adopted son of Mehemet Ali (q.v., Pasha of learns. Egypt. He reorganised the army on European plans, and helped the Turks against the Gks. In 1831, supporting his father against the sultan, he conquered Syria and became governor of the prov. Mehemet All once more revolted against the sultan and Ibrahim inflicted a severe defeat on the Ottoman army at Nezil, The Furopean powers now interfered, and he had to retire before the Brit. troops, losing all he had gained. He went to his private estate at Heliopolis and lived there for sev. years. In 1848 he was appointed viceroy, as Mehemet Ali had become im-beele, but he died shortly afterwards at Cairo

Ibrox, S.W. suburb of Glasgow on the Clyde, Scotland. Ibsambul, see IPSAMBUL.

Ibsen, Henrik (1828-1906), b. at Skien, a small S. Norwegian tumber port. At sixteen he became an apothecary's assistant, intending to study medicine.



E.N.A.

HENRIK IBSEN

effete puritanism and social prejudices of the Norwegian prov. life, in which his unthe Norwegam prov. me, in which is an impre early years were passed were rich material for the bitter satires on civilisa, tion with which he subsequently stung Europo into fury. His earliest work-Cathina (1850), was purely historical, and was inspired by his reading of Sallust and 378 Ice

there under the celebrated Heltberg he inhabs, are chiefly occupied in mining and associated with Jonas Lie, Vinje, Björn-in manufacturing tiles and bricks. Pop. son. Botten-Hausen, and others. Thanks | 5000. to Ole Bull, the violin virtuose, he became director of Bergen Theatre from 1851 to 1857, and wrote for his productions, but practically all the MSS, have since been destroyed, with the notable exception of destroyed, with the notable exception of the vigorous historical drama, Lady Inger of Ostrat. In 1857 he was appointed maneger of the National Theatre at Christiania. A year later appeared his first saga-drama, the splendid Harriors of Helyrland. The Preladers followed in 1864, and 1873 saw the completion of Emperor and Galilan, his greatest historical prose-drama. I., the cynic, pessimist, and iconoclast, made his debut in 1862 with Love's Comedy, eleverly written in epigrammatic verse. In the in 1862 with Lore's Comedy, cleverly written in epigrammatic verse. In the same style there followed Brand (1866), an attack on pietism, and Peer Gypt (1867) his most influential and popular dramatic poem, called by many 'the Scandinavian Faust.' It was, however, in the scathing Faust. it was, however, in the scathing satirical prose dramas which constituted his third period that the I. of European nis third period that the I. of European significance found mature expression. In the League of Fouth (1869), Pollors of Society (1877), and An Enemy of the People (1882), he attacked the whole fabric of modern politics—as he terms it, "government by geographical formula." It's studies in femiusm are of equal interest and power: Rosmersholm (1886) befor the best multipe Pull' March 1870: being the best, and the Doll's House (1879). in which he discusses the problems of modern marriage, being next in ment. The Lady from the Sca (1888) is an elegant The Lady from the Sca (1888) is an elegant poetle conception, essentially the same in idea as the Ibal's House. In thoose (1881) I, exploits to the fullest the possibilities of hereditary disease as a dramatic motif. The Wild Duck (1884), an unsatisfactory piece of symbolism. 18, like Brand, an attack on unpractical idealism. His late works are: Hedda Gabler (1890), The Master Builder (1892), representing the zenith of his powers, Lattle Eyoly (1894), John Gabriel Borkman (1896), and When We Dead Awaken (1990), all of which are whichy developed from the ideas contained chiefly developed from the ideas contained in his earlier works. All his writing is preeminently suited for the stage, and consummately skilful in technique. See G. B. Summerer sandinace another. See (c. B. shaw, The Quindessence of Ibenium, 1891; Sundede l'aerken (collected works), 1898; G. Brundes, Ibsen and Bjornson, 1899; W. Morison, (trans.) Correspondence, 1905; W. Archer and others (ed.) Collected Works, 1906-12; E. Gosse, Hearik Ibsen, 1907; M. J. Mose, Hearik Ibsen, 1907; M. J. Mose, Hearik Ibsen, 1907; M. J. Mose, Hearik Ibsen, 1912; A. Orbeck (trans.) Early Plays, 1921; W. Mohring, Ibsen und Kerkegaurd, 1928; J. Kroner, Die Technik des realistischen Dramas bei Ibsen, The Intellectual Background, 1946; P. K. D. Tennant, Ibsen's Dramatic Technique, 1948; yarjous plays in Everyman's Library, trans. by R. Farquharson Sharp. shaw, The Quantessence of Ibenism, 1891;

Ibstock, vil. in Leicestershire, England, 5 m. N. of Market Bosworth. Archbishop Land was rector of the par, church. The converse process of melting, I. contracts.

Ibycus, Gk. lyric poet of about 540 B.C. b. at Rhegium, Italy, and spent most of his life at the court of Polycrates of Samo. his life at the court of Poly crates of Samos, According to tradition he was murdered at sea near Corinth. The crime was traced by means of cranes which had followed the ship, and 'the cranes of lbycus' became a proverbial expression for divme revelation of crime. The story is the subject of Schiller's poem Die Kraniche des Ibycus (1798); for fragments of his verse, see Diehl, Anthologica lyrica Graca, ii. (2nd ed.) 1912.

Lea, dept. of Pecu, bounded N. by Lima.

Ica, dept. of Peru, bounded N. by Lima, S. by Arequipa, E. by Avacucho, and W. by the Pacific; covers an area of 9798 sq. m. Much of the surface is sandy desert, but the valleys of the Chincha, Condor, and I are fertile, and yield fruits, cotton, and indigo. Wine and brandy are made from the fruit, and a considerable amount of copper is inmed. The chief in, is i. (San Geronimo de L) which was ruined by an earthquake in 1617. Pop. (dept.) 110,300; (tn.) 21,200.

Ioa, or Putumayo, 11v. in Ecuador, S.

America, rises in the Andes, flows S.E., and at São Antonio, in Brazil, joins the Amazon. It is navigable for small craft for 750 m.

Icarius (Gk. 18090), (1), or Icarus, in Gk. legend an Athenian, taught the cultivation of the vine by Dionysus in return for hospitably entertaining him. tributed his new gift freely, and the shep-herds of the neighbourhood becoming intoxicated, thought they had been porsoned by him and slow him, throwing his body into a well. Ergone, his daughter, hanged herself in despuir on learning the news of her tather's death. According to news of her tather's death. According to tradi-tion, Frigore is the Virgo in the zodine, fearus is Bootes, and Icarus's dog, Maira, is Procyon or Canis Minor. (2) Lace-demoman, was the father of Penelope, whom he tried to dissuade from accompanying her husband, Odysseus, to Sparta. She insisted on carrying out her intention with such modest tirinness that her father erested a statue of modesty in her honour. Icarus, see D.EDALES.

ice to word common to the 'Feutonic languages), name given to the substance into which water changes when subjected to a sufficiently low temp. It is a colourless erv-talling solid, generally assuming forms belonging to the hexagonal system; its habit of twining is the origin of the 'ice-flowers' and designs assumed by hoar-frost. In the form of hoar-frost, snow, and half, is often precipitated. The temp, at which water freezes into I. is very easily determined, and for this reason is employed as one of the standard temps. In the measurement of the scales of a thermometer. In the Centigrade system this temp, is zord, as in the Reaumur, whilst in the Fahrenheit system it is 32°. In the act of freezing, I. undergoes a notoworthy expansion, so that I. at 0°C. is not so dense as water, as is proved by the fact that it floats thereon. In the

and the water formed contracts under beat t till the point of maximum density, about 4° (' i to ched Above this temp the 4°C I LOURCE VIOVE this temp the expansion of water is continual, and at no temp as water less dense than 1. The density of I at 0°C is 917), of water at 0°C, 99985, at 40. C. at 10°C, 99976, and at 100 C, 95866. The coefficient of cubical dilaton of I at moderately low temps has been calculated as 100013. hadded as 10001.5 and its specific heat is 500, or about half that of vater When I as meld although no recoft temp tales place is defined quantity of heat is all midd namely 50 calones per materials. gram, and the same arount of heat 1 to a stribe the slow influx of heat given out when water tecomes I. This is the unit to each technique expressed is the venthe of the on of I contain strive below life use of I she water example in the contain its in the consumation in the

configuration of the land Many traces, for instance, are left by glieral action, which serve to show that the whole of Europe was it one time much more exposed to such action than now (See (14014) Action, Dryudyation, Boutloff & Olyv, (te.) In the Upper Provs of India where a read to first a truth to before water is made to freeze it night by being pluced in porous vessels, wrapped round with a wet cloth. In Bengal pits are dug 2th does and filled for three quarters of the light with dry straw. The water is then light on this straw in flat porous 10s the expense of its own heat in I the cooling is rapid enough



THE TOUGHTON A LITTER LOS

or clerg mass at the era k A Movements fit was a solikely to let a rock debris i it ie i psit) brought I win I I placer it is a terminal mornine in let wat t

freezing point must be lowered by in macromines is grewing. It is also largely crease of pressure and it has been a continue as a utilized means. For details as crease of pressure and it his been a cet that for every additional atmosphere of pressure, the freezing point of water is lowered 0.0070 degrees. This discovery was theoretically worked out by Jan e. Thomson in 1831, and verified experimentally by his brother Win thomson (Lord Kelvin) in the following year. Many of the properties of 1 are explained by this uniong others that of experimentally by which two blocks of 1 and regulation, by which two blocks of 1 and regulation, by which two blocks of 1 and on a typical way from its precent by near the properties of the regulation, by which two blocks of 1 and on a typical way from its precent by near the point of contact 1 and one within view of whalers. The pressure if the point of contact melts the 1, but this relieves the pressure and the water at once freezes again, until in time the two surfaces coalesce. The motion of glaciers is also probably due to this process

I forms on fresh water if the temp of the air is below free jug point for sufficient time, but not until the whole mass of water is cooled down to the point of maximum density Sea water will not freeze, under the most favourable conditions until a temp of -2° (19 reached, in the I formed four fifths of the salt until a temp of -2° (14 reached), in the fem point of the fit was collision originally present is rejected, so that water melted from see ice has less salinity than I which can ed the wreck of the minimum sea. I. exists on a grantic scale in the glaciers and snows of mountainous regions, especially in the seas and lands of both Polar regions. From a guard Patrol for the location and destruphysiographical point of view, I. is an innortant agent in the denudation and months, the patrol annually plots the

but when it come, within view of whalerand other vessels, its cliff like faces and it pinnaches beten in the suisline with a dazzling with During its first fight in I strength sabed with pebbles n I rocks and other detritus-the rem n it of its glacier days As it enters vamer zones, it malts disinteractes, tilts ni often overturns I rom the sp. gr of ic it is calculated it it only one-ninth or Is, appears above the ocean surface and as their speed is often considerable, it is clear that they are a grave source of penil to passing ship it was collision

movements of some thousands of icebergs, and radios their positions to ship-ping. Aircraft are used, too, in the search, and any ship sighting an I. must report the position. The destruction of the Is. cannot be hurried: explosives, gunfre, and even flame-throwers have been tried to hasten their end, but in vain.

Ice-breaker. Many of the harbours of N. Europe are frozen over for a great part, or the whole, of the winter, to a depth of sev. ft., so rendering navigation impossible. The only method of keeping a channel open is to prevent the ice from freezing too thickly, and this is done by reeding too thickly, and this is none by the continuous passage up and down of a specially-designed vessel. Such vessels are known as 1s., and naturally present some peculiarities in construction. They must be both weighty and powerful, of exceptional strength, and capable of travelling at sufficient speed to break the ice by their momentum. In addition to cracking the ice into pieces of some score tons, they are constructed to slide up on to the ice and break it down with their to the ice and break it down with their weight. The Ermah, built for the Russian Gov. by Sir Whi. Armstrong & Co., was the first important ship of this kind. She had a length of 320 ft., a breadth of 71 ft., her displacement was 8000 tons, and her engines, of 8000 LH.P., developed a speed of 15 kinds. The Ermak could break her way through 12 or 13 ft. with ease, and has rammed through 31 ft. Sho rescued on one occasion eight out of nine vessels which had been caught in the ice, the last one sank before the Ermak could reach her. In 1917 yet larger and stronger ships, the Sriotogor and the Linin, were built by Armstrongs for the Russian Gov. The Lenn could get under way in twe mins, after being trozen in all night. These is, are also passenger ships. A smaller I., built on the same lines, the Sampo, was built for the gov. of Finland. Many Canadian and Anot, ports are only kept open by the use of ice-breaking ferry steamers, such as the Scotia, built by Armstrong, Whitworth & Co. to carry railway trains across the Straits of Canso to and from Port Mulgrave, Nova Scotia. to and from Port Mulgrave, Nova Scotta. In 1966 the I. Lady Gray was built for the Canadian Gov. by Vickers, Maxim & Co., and in 1909 the Earl Grey, on the same, lines, but modified for extra speed, was built by the same firm. Since these versels were built many ships that use the Canadian ports and the St. Lawrence R. or built on the local way for the proportion. are built on the ice-breaking principle— that is, with a sharp ked that rises diagonally to the front of the ship, lifting it on to the lee by the sheer torce of the drive and cracking the ice by its weight. Is. are built on the watertight compartment principle, as there is always a climee of some part of the bottom or sides being pierced or crished. The hull of an 1, has pierced or crished. The num of an 1, has a very stout frame with the ribs spaced very close together, 12 ins. fore and aft and 10 ins. in the middle, while the plates are of unusual thickness. The outer skin is double right fore and aft along the water-line and to the bottom of the keel, very close together, 12 ins. fore and at and 10 ins. in the middle, while the plates are of unusual thickness. The outer skin is double right fore and at along the water-line and to the bottom of the keel, where the friction of the ice is apt to wear m., and glaciers exist in all the mts. away the material. Tanks are fitted in above 4000 ft. In sev. of the mts.

the fore part which can be filled at the rate of 250 tons an hour in order to give the required weight. The counter is the required weight. The counter is specially strengthened so that she can break ice when going astern, and the rud-der is built in the form of the ship to escape injury.

Ice-flowers, see FROST FIGURES

loe-flowers, see Frost Figures.

loe Hockoy, originated under the name of Bandy in the Fon country round the vil. of Farith over a hundred years ago. Since that time it has been played elsewhere in England, and has been introduced on the Continent, into America and into Com.do where it is the national game. For the game of Bandy' there were eleven players a side, the stick or bandy' was like a hockey stick, and the ball was a rubber lacrosse ball. But the came, developed in America and Camada. game, developed in America and Canada since 1867, is now played somowhat officently under the name of I. H. In I. H. there are say players a side, using a large broad-bladed type of hockey stick, but instead of a ball the game is played with a vulcanised rubber disk called a puck. Four reserves are allowed to each The arena is enclosed by wooden barriers about three ft. high, and this means that the puck does not go out of play frequently. The goals are each 4 ft. high by 6 ft. wide, and stand in goal areas 8 ft. by 5 ft. This fact, coupled with the shippers surface, makes the game exceedingly fast, and it is generally claimed to be the fastest game in the world.

Icel, we MIRSING.

Iceland, is, republic situated in the N. totand, is, tepublic situated in the N. Atlantic Ocean. It is 2.00 m, from the S.L. coast of Greenland and 600 m, W. of Norway. Its area is over 39,700 sq. m., length 295 m, and breadth 191 m. The total length of its coast-line is about 3730 m, about one-third of which belongs to the N.W. peninsula. In shape it is a rough oval, its marrowest point being at the S. The const-line presents a constat the S. The coast-line presents a conpenetrating far inland except for a considerable portion extending along the S.E., which is almost unbroken. It is an ico-covered plateau or tableland built up of volvame rocks and pierced on all sides by foods and valleys. The lowlands cover about one-fourteenth of the whole area, and are almost the only part of the is. and are almost the only part of the is, which is inhabited, the central tableland being absolutely uninhabitable on account of the rigon of the chunte. The habitable area of 1. is about one-fourth, glaciers, lava-streams, and elevated deserts making up the rest. The two bays, Hunalloi and Bredthiford, separate the N.W. peningula from the main mass of the is. thus forming two full-largeof the is., thus forming two tablelands—a large and a small. The isthmus cona large and a small. neeting the two is scarcely 5 in. wide, but has an altitude of 748 ft. The N.W. peninsula has an elevation of 2000 ft. The int rior of the is, has a wild and desolate the volcanic agency is still active, and the S. coast, and was estab, permanently terrible eruptions have repeatedly oclour years later at what is now Reykjavik. curred within the last four centuries. The 10 ther settlers soon followed, and in the curred within the last four centuries. best known volcanoes aro Hekla, Katla, and Askia. A large portion of L is covered with lave, and the hot springs or geysers scattered throngnout the is. are other specimens of volcanic agency. These are specially found in the S.W., where one of the main goysers throws up at intervals jots of water, stones, and mud to a height varying from 100 to 200 ft. In Mt. Hecla (5095 ft, high), which last crup-ted in March 1917, are best exhibited the general effects of volcame agency.

The scenery of the is, is of great natural beauty, the climate is mild for the lat., and the weather is extremely variable, storms and hurricanes often occurring The vegetation is tolerably uniform throughout the is., presenting the characteristics of an Arctic-European type Heath and bilberry cover large stretches of the surface, and grasses are of great importance to the inhabs., who are dependent on them for supplying them live-stock. The development of forest-trees is insignificant, the birch being almost the only tree found, and this in a very stunted fine. It to 10 ft. in height. The wild flora of L is small and delicate, with bright bloom, savurages, sedums, and heaths being especially admired. As regards the fauna, species are few. The polar-hear is an occasional visi tant, and reindeer were introduced in 1770. The seas abound in seals and whales. Over half of the species of birds are water fowl, of which the most important is the eider-duck on account of its down. The birds of prey are the Icolandic falcon and the cagle. The ptaringan is the only game bird. Great numbers of sea-guils, guillemots and puftins are seen near their breeding places on the cliffs and islets round the coast. Tho hooper or whistling swan is also found in considerable numbers in I. The codfisheries are valuable, trout are production the lakes and streams, and salmon in the lakes and streams. The sea abound in many of the rives. The searound the coast teams with haddock, halibut and basking shark. There are no railways in 1.; but in 1910 there were some 2800 m. of completed roads. The national Church and the only one endowed by the State, is Evangelical Lutheran. There is a univ. in Revkjavik. The chief products of L are fish, itsh oils, wool, mutton, and ponies. The chief exports are salted fish, meat, fish oil, and timber, and much of them go to the United Kingdom. much of them go to the Chited Kingdon. Reyklavik has a pop. of 18,900. Other ths, are Akureyri (6100), Hafnarfjordur (4100), Vestmannacyjar (3100), Siglutjordur (2900), Isatjordur (2900), Alcranes (2300), Nos (1200), Olaf-fjordur (915) and Scydis-

fjordur (\$11).

History.—1. received the greatest portion of its pop. from Norway between \$60 and \$70, when it was colonised by Scandinavian Vikings, Viking, though some settlements of Irish monks had been made about the end of the eighth contury. The first Norwegian bad been made about the end of the divided into two periods, the anet., exemple contury. The first Norwegian tending to the fall of the republic, and the settlement was made in 870 by Ingolf on modern, from that date to the present

Other settlers soon followed, and in the course of sixty years all the habitable parts of the coast were settled. The gov. was at first in the hands of the overseer of the temple in each settlement, but lutterly, when the separate jurisdictions were joined together, a kind of aristo-cratic republic was formed. Christianity was introduced in 981, and adopted by law in 1000, and schools and bishoprics were c tab. I. was a dependency of the han Crown from 1380. In 1918 I. again town from 1860. In 1911, again became a sovereign state, but united as a constitutional monarchy to Denmark with one king. Following the aunexation of Denmark by the Gers. (April, 1940) the icelandic ministry assumed control of do own foreign relations. Soon afterwards the is, was occupied by Brit. naval and multary forces with the object of protecting But, maritime interests, because the is was of great strategic importance in relation to U-boat warfare and as a potential lase for the invasion of the Brit. Isles. in 1911, the Althing decided to estab. a republe; but pending the formal abrogation of the union with Denmark a regent was appointed from year to year. In July 1911. President Roosevelt announced that Amer. forces had occupied I. These forces were not intended to replace the But, forces, President Roosevelt, in a message to Congress, said that the U.S. could not permit occupation by Germany of strategic outposts in the Atlantic to be used as air or naval bases for an eventual attack against the W. hemsphere. The Brit, guarantee of the tuture of L's independence was repeated by Mr. Roosevelt, who said that the U.S. Gov. did not wish to see any change in the custing sovereignty of the country. By extending Amer. defences to I., a half-way house between Britain and America, Wr. Roosevelt had taken a step that was demorphise consequences. of cuormous consequences in safeguarding the line between the U.S. and Britain. by debiseite (May 23, 1941) Ce Act of Union of 1918 was repeated and a now constitution adopted providing for a re-publican form of gov. Executive power is in the hands of a ministry L. Reykjavik, responsible to the national legislative assembly or Althing (founded in 930 A.D.) of two houses. The membership of the Althog is maintained, under the new constitution, at 52, of whom 14 are elected to torm the Upper House,

I anguage.—The feelandic is the most northerly of all cultivated tongues. It is tice from gutturals and excess of hissing sounds, soft and sonorous to the ear, and nch in roots and grammatical forms. There are thirty-the clotters in the alphahet, all the Eng. except w, also c, (the terman a and o), b, and two characters for the Eng. th. The present-day language is almost precisely the same as that spoken and written at the date of I.'s colonisation in the math century.

Literature. -- Icclandic literature may be

The hterature of the anot. period | may be divided into three groups, viz the anct, mythical, and herote songs, the scaldle poetry, and the sugas. I, has always borne a high renown for song, al though it has never produced a poct of a high order Among the most important works in Icolandic liter iture is the coliceworks in columns ther tune is the conce-tion of anoth a then songs called the Lider or poets Edda, compiled soon after the introduction of this tanity songs of victory, elegies, and sparams also belong to the init period of the literature Among the mythical songs may be mentioned the Voluspa, Hamarsheimt, Hyms-kanda, et Of the writers of scaldic poems may be cited I all Skallagrimsson, who wrote a fine lament for his son Lyan i, Kormak etc. The crowning product of Icelandic genus however, is product of iteration remains another processor in this is in its purest form, the life of a hero composed in regular form and governed by fixed rules, and whended for oral recutation. The saga grow up in the quieter days that followed the change of faith (1000) when the dieds of the great fimility heroes were still chorished by their descendants and the explains if the great kings handed down At all 1 asts and gather ngs the telling of stories was an amortant feature and the regular form. The Irish in lucino did much to peract the form in fit 1 to the W sug is, consisting the fly of local and far it v hist, they also comprise a large number of hists and committe works amongst them the Coblins the Volume Series the Committee Comm being the Folsunga Siji the Gunn langs Saga the Saga fili if Kr a and his Companions Frill if Sagi etc. Of he larger and more important class of sagas retered to may on at in 1 the Islandingsool, the Instituted in a ount of the settlen n of the 1) the Islandingsool, the Institute 1 is a notation of the settlen n of the 1) the Islandings Sagas the Islanding Islandings Sagas the Islanding he larger and more unpertant class of ni Sair (m) Jonson 1 Pr mer of M en leclandie 1927 The Lecland Vear 1 / V Gul sons on 1 trans of M on Icelandic 1927 In Island Year I \ Cul mund on Island am Begin id \ X Inhr hundert, 1904 I Thoroda Island, 1906 I Brum, Inited for pan Island 1 21 D \ Lun den Island Reckett, Iceland I alure, 1901 I Indicate, Iceland I alure, 1901 II Indicate, A Inna of Contrasts (New York), 1937 S J Unwin Iceland and Inna of 1941, B, Thorday on, Iceland Instand Present, 1941 1911

in water when it forms a valuable article of diet especially suitable for invalids

of the tesperary surrous for invalues to land Spar, clear, colourless variety of calcute (CaCO_s), found in Iceland—It forms large rhombohed; thating a sp g of 2.7 and a hardness——I he vaine of 1.5 hes in its having a strong double retraction, which makes it pre eminents sinted for polyriscopes, Nicol sprisms and other optical purposes the supply from lecland where crystals of very large size are found, is nearly exhausted, and no substitute has been found to compare with it

Ice u, name of an anet Brit people who inhabited that part of kunland where now exist the os of Norfolk Suffolk Cimbridge, and Huntingdon Then queen, Bondicer headed a revolt as unst the A D 61 Rom-

Ice-Plant, or Mesembryanth mum cry stalling a species of Audient found in S Africa and cultivated in Britain It is an ann plant with succulent leaves covered with sust ming hairs, and bears white flower

100 Polo see unter HOCKI'S

Ichabod, in the O I a child son of Phine its and grandson of I'll a named by his nother (who d in giving him 1 th) when he was overwhelmed by the dis-istrans tidnes of the local the Ark the defeat 1111 and the death of Hi and

his on the numericans the play had depart it 18 m is 11 md xis 1).

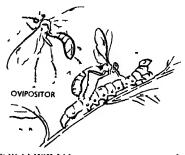
Ichaboc i hib it in more tenes of the World is 1 in the the blongs to the Country of Good Hop and exports gu ur i

This is the period of the corse of Pupil and some of the land of t puret being the rule to the in mease could be of Section and its temporal before the could be and its termer traffer in the hands of the But and the

Ich Din (Cer., I 190) motto of the Pim c of Wales It vis erroniously 110 t lave be nadopted by the Black Princ, a rether with the three white oster higher from John King of Believer why fell at the attle of Cifes The orn not both the north and feathers is obscure but in the will the Black Principle to two bills I Arms (i.) the hall toward look of tame dif-from cd with a less spent (ii) the shell for the oble three octrich feut teers their and specing as many Cstrills instribed with the words Ich Drn. Ih it this loop borne by the Princes of Wice for the vone Ichryusai Ryusai, see Hinoshior

Iceland Moss, or Cetroria islandica, lichen found in the N homisphere, frequently in Britain, and in great abund ance in Iceland It contains a bitter and all Africa, and H icharumon, var principle which is removed by steeping it Widringtonii, is found in the S of Spain. The former was regarded as sacred by the of their having lows of reptile teeth fixed Fgyptians, who gave it the name of in distinct sockets, they were birds of pharmon's lat, the embalined bodies of powerful fight, as shown by the con Is were often preserved by priests in the temples they will eat the eggs of ser pents and swallow smaller vermin, and are sometimes domesticated for this DUPDONE

Ichneumon, see also Mongoost



ICHNEUMON 1114 CABLLESA

Ichneumon-flies, name applied to the Ichneumonida a family of insects cen-taining nearly (000 species) and belonging farming nearly (000 species) and personnelly are a raw or conical teeth intensity a second to the intensity of the mail of the second in a continuous proof as found in almost all rates of the world and finally set in a continuous proof as found in all state are generally partitle in any 18400 teeth have been counted in a In the lirvel study on, Lepidoptera in jother orders of insects—the lehinum on live thus destroy thousands of enter-pillus and are even numical to spiders The distingui hung tertages of the telmen nende are the long jointed antenric closely compacted at the extremities the genus I conving or wingless I h neumon at so newhat ant like in appear ance, in lair very common in Britain Igrioty) us armatus is a remarkable Brit species which go s under water for the purpo o of depositing to eggs in the larva of Trichopter i

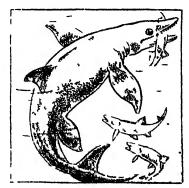
Ichor ethered that which according to Gk mythology howed in the veins of the gods instead of blood. The word is still used in the poetful sense. In path ology it signifies the watery actual discharge from ill con itroned wounds

lehthyodorulites (Crk. Ages, fish, Spr appear and Ages stone) fossil spines of sharks, which are eiten found isolated in and strite therest of the skeleton having notted away. Over forty genera of 1 me recognised as Onchus, Clenacunthus Lepra

contines, I destus etc

Iohthyology ((k y n s, a fish), term
applied to that I rinch of zoologs which

In distinct sockets, they were birds of powerful flight, as shown by the con struction of their wings. In shape, they resembled modern birds very closely, and they were about the size of a pigeon Most of the specimens of I are preserved in Yale I my and in the univ of k ansas Ichthyosaurus, or Ichthyopteri (Gk fish hard, name applied by Konig in 1815 to thind of porpose shaped nather petile, with a fish like body, from its outward affering. They belonged to the Meso con period, becoming extra tafter the left in of the chalk Nearly complete sled time have been obtained from the has of Ingland and Germany mans door in the Rhite Jurasle, and Cicticens strata of Europe Australa Africa and Ameria those of the for a fine and a meria those other is a for a circulation age is mig distributed if in the I indus and New Zeiland if a valied in length from about , it to 10 vd. This I lingo; slow from Bane, Biv tier is the largest known judices the beautiful in a was about the same size. The first is a was about the same size. The on meet Ing species I informeding unit / minimis were alout 5 to 1 vdd or marsh anunals the cartiest known I littrosmions (Mixisimus) were very since and occur in the Iriis - Ency had Incy had larg heads with a slender, pointed snout in eves surrounded by a ring of over in a volerotic plates, and jaws with a r w or conical teeth, and ho of a size



ROBERT IN ICRUS

male mouth. They breathed air and wer carnivorous, I ling on tishes and in lines. Their bones and coprolites applied to that It into to Zoology which the carrieronus, I may on manes and learning of fisher (q 1)

Ichthyorier, see Ichtity orat respectively. I may be supplied quantities of phosphate of leathyories (Gk. 48%, fish and 2018, fint for prepasing attilicial manuals. The casination of fiving birds with a keeled breast bono which are found only in the cretaceous strata of N America. They form a group called Odontornithe, because the backbone very flexible. There is form a group called Odontornithe, because directly into the fusiform body, which padded like limbs or swimming flippers (726) forbidding honours to be paid to encased in skin are always found—the pictoral and pelvic fins. The hinder are often small, but nover absent allogather. The skin is smooth, forming two tripers and the property of the skin is smooth, forming two tripers are described for the property of the propert angular median fins one in the middle of the back (dorsal) and one at the end of the back (doesn) ind one at the out of the tall. I ramples are in the museums of stuttgart, Tubingen. Budipest and Chicago. The terminal vettor c passed into the lower lab of the tail in which was expanded in a vertical plane. Behind was expanded in a vertical plane Behind the dors of fin was a row of smaller liner fins, as a n in a specimen from Wurttom berg (1892) The resembling between the I and the while is term is example of convergence between two distinct races—reptiles and mammals—resulting from adaptation to aquatic life. The Baptanodon Shistasaurus and Ophthal Baptandon Shistanda and Connain Monarms See C. A von Littel, Textbool of Palaon tology, ii, 1902, British Mu cum thude to Fossel Reptiles and I ishe and Catalogue by Dr. Woodward, I. Hawkins The Book of the Great Sea Dragms, 1810 F. von Huene, Die lehthy naurier des Lias, 1922

loknield Way, anoth pre Rom road of the Icem across I England It runs from the Wash in a Wid cettin by way of Cambridgeshie, the bugh I etchworth and Fring in Hertford hire, taking its way over the Thames and following the line of the Berkshite Downs to the source of the kennet in Wilt hat

Icolmkill, sec Ion

loon, representation of Christ an angel, or a saint, found in (ik an i Orthodox E Churches It is punted on a flit surface, but parts are often covered with gold or silver embossed plates See also Icono CLASIS

Iconium, a Phrygim city in dling Damascus in antiquity and importance in and times Paul vised it on his first journey, coming from Antioth, and met success among both lew and Gentiles (Acts, xiii 51-xii 1 ft). Ill adapted for defence, I owed its continuence to its central position and its well water d truit ful dist It became a dom colony, and in later times was the cip of the seliuk Empire It is represent i by the modern Konva, in the plain of Iv cron a No. the

Taurus (see Koni)

Iconoclasts (Ck x okharrr, image braker), nime applied to the Christin party in the church of the eighth and ninth enturies who refull to tolerate the use of images in places of worship In the early Christian church outs symbols like the fish palm branch, or dove were used, but by the fourth century stend pictures were apparently common and denounced by the p (ouncil of Eliberia (306) The sixth General (Irulian) Council of Constantinople (692) sanctined the representation of Christ as a Man, and the second council of Nicoa (747) allowed sacred images in the churches Distinction was made between προσκυιησιε τιμητικη Idaho (Indian, mountain gem), Rocky or δουλεια, veneration, and προσκυνητις Mt state of U \ A, largely in the basin λατρειντικη or λατρεια, worship due to of Columbia R It is bounded N by

the and Germanns, patenach of Constantinople, were like two Impress Irans, supporters of the konolitre (magoworshippers). One result of the quarrel between the konolitre and I was the session between the konolitre and W. Rome because the kind to the kind of the constant of the constant of the kind of the kind of the constant of the kind of the came linked with the Curovingian house, and the Pope crowned Chulemigne in The hom Church emphasised the utility of pictures and statu a for teaching the illiterate (Council of Frent 8685 XXV) Image worship was restored in the Funder Theophilus and Theodora (342) Records of the reforming I of the seven teenth century prose that image worship but been practised considerably in Britain See Acts of the Iconoclast Council of \$15° in Scances Académiques des Inscriptions, 1903 1 Maria Les Considerationale in 1897 1. des Inscriptions, 1903 1 Marin I es Womes de Constantinople, vv. 1897, L Breliet I a Querelle des images, 1904, I Hastings I melle padau of Religion and I thics (1)11), vol. vii. J. von Vegh. Die Billerslaim r., 1915. G. Ostrogor ky, Stulina zur Greschiche des by antischen billerstreites 1129.

letinus, famous (ik architect who lived towards the end of the fifth century Be and was thus a contemporary of lendes and I hidres. His name will always be a sociated with the latthe ion at Athens, which he designed in conjunction with (alliciates (111-139 is) I was about the architect for the temple of Flouris, where the my stellar were eclebrated and for the temple dedicated to Apollo Epi curi is mar Plugali in Arcadii Portions of ill these buildings still exist

Ida (147)) first king of Bernicia, was in the prime of life when he assumed His rule probably did not extend DOMEL between that riv and the Humber, being funded after his doubt He built a for the called by the Angle Beblinburch, in m Bamborough State the sons reigned in a recession over Bernleia

Ida, or Idda, the of W. Africa situated on the I be of the Niger, near the be indary of Nands Nigera. Pop about 5000 Ida (Iunkish Kaz-Digh), interange in Nil Minor, which extends through Phrystand Management the architecture.

git and Misis and commands the anct plun of Troy Mt Gargarus (2715 ft). tiun of Troy Mt Gargarus (715 ft), its loftiest peak, was the seat of the temple erected to (y belo, the Idea Mater

Ida, Mount, or Psiloran, in Crete, was famous in the worship of Zous the god being nurtured, according to mythology, in one of the caverns. This celebrated in one of its caverus. This celebrated peak is situated almost in the centre of the is and rises to a height of 8000 ft

ida, Mount, New /caland, situated in the 4 Is, about 70 m. N of Dunedin, gold fields have been discovered in its neighbourhood

Brit. Columbia and Montana, E. by Montana and Wyoming, S. by Utah and Novada, W. by Oregon and Washington. These limits were fixed in 1868, five years after the formation of the ter., which was admitted to the Appen water in 1890. admitted to the Amer. union in 1890. Area 83,557 sq. m. The Snake (Shoshone or Lewis) R. is on the W., noted for its cation and numerous entaracts. Goose Creek and Bear R. Mts. come S. and S.E. of Salmon R. Mts., which divide the state into N. and S. Idaho, and separate Snake R. valley from Great Salt Lake basin. Besides the mountainous regions there are desert and sage-plains and fields of basalt. All geological ages from the Silurian to the Pliocene are represented, especially the Tertiary and post-Tertiary periods. Gold has been found on Pend d'Oreille II, since 1852. The Cour d'Alene mines of gold, silver, copper, and lead are famous. Coal, salt, sulphur, and fron-ore are also found. The land is more suited for grazing than agriculture, but wheat, oats, barley, and potatoes are produced. The ann. mineral production is over 10,000,000 dollars. A great source of wealth is timber, of which nearly a billion ft. are cut each year. An extensive irrigation schemo year. An been he has been corre out which adds another half-million acs. to irrigated lands. There are twenty-three cos., the chief tas, being Boisé (cap.), pop. 26,130; Pacatello, 18,100; Idaho Falls, 15,000; Caur d'Alene, 9000; Lewiston, 9500; Nampa, 9000; Twin Falls, 9000 · Mos-cow (with state univ.), 5000. The state (in the fr out which adds has a governor, a senate of 44 members, and a house of representatives of 59 members, all being elected for 2 years. It is represented in Congress by two senators and two representatives. The leading religious denomination is the Mormon Church. There are numerous elementary schools, two normal public schools, and denominational colleges. Pop. 521,800. denominational colleges. Pop. 524,800.
See H. H. Bancroft, Washington, Idaho, and Mondana, 1890; J. E. Rees, Idaho Chronology, 1918; F. E. Lukens, Idaho Citizen, 1925; Annie Greenwood, We Sagebrush Folk, 1931; Federal Writers? Project, Idaho. a Guule in Word and Picture, 1937, M. D. Beal, A History of South-Eastern (Idaho, 1912). South-Eastern Idaho, 1912.

South-Eastern (dano, 1912.
Idaho Springs, banking th. and resort of Clear Creek co., Colorado, U.S.A., on Colorado and S. Ruiway, 30 m. W. of Denver. Situated in the plateau regions of the Rockles, it has hot and cold sodasprings, and gold and silver are found. There are concentrating mills, machine-shops and lumber-vards. Pop. 15,200.

Idalium (Gk. Idahov), anct. tn. of

Cyprus, was situated almost in the centre of the is., on the site new occupied by the vil Dalin or Idalion. It was sacred to the worship of Aphrodite, who was hence named Idalia. The tu, was destroyed by earthquake before the time of Pliny.

sought her favour. They fied in a winged chariot given by Posoidon, but were overtaken by Apollo at Messenia, where god and mortal fought for the nymph. Zeus, interposing, told her to choose between her suitors and she chose I. She became the mother of Cleopatra and Aleyoné, and having meurred the wrath of Apollo, they d. young. I, and his brother both took part in the Argonautic expedition; they were killed whilst engaged in a raid into Arcadia with their cousing Castor and Pollux. Zeus came upon them as they were quarrelling about the plunder and slew I. by lightning.

Iddesleigh, Sir Stafford Henry Northcote, first Earl of (1815-87), Eng., statesman, began his political life in 1812, when he became private secretary to Gladstone. He succeeded as eighth baronet in 1851, and succeeded as eight to baronet in 1851, and four years later entered Parliament in the Conservative interest. Distacli appointed him president of the Board of Trade in 1866, and in the following year promoted him to the India Office. In 1874 he became Chancellor of the Exchequer, and

oreame Chancellor of the Exchaquer, and 1376, when Disracli went to the House of Lords, he became leader of the House of Commons. Created carl of Iddesleigh in 1884, he went to the Foreign Office in 1886. An unselfish man always putting party before himself, he was an admirable and much-loved statesman, though scarcely of the first rank, being lacking in lititative. See Andrew Lang (ed.), Life, Litter and Diaries, 1890. Ide Languages, see INDO-EUROPEAN

LANGUAGES.

Idea (GL. ióta, from ióta, to see; Lat. species), term widely used both in philosophy and in common parlance for a mental image of any external object or for the abstract conception of a class of objects. It is also used in a wider sense for any product of intellectual action. Plato made use of the term in metaphysics to define the absolute realities eternally existing in the mind of God, or the model of which all the objects which can be per-ceived are made. These vary in detail, but the one archetype or 'ldea remains constant, and can be apprehended only by the action of the intellect. Empirical thinkers, who insist on the ceality of ex-ternal objects, have never accepted this users. Locke, at the beginning of his Losey on the Human Understanding, de-tines the term 'idea' as 'whatsoever is the object of the understanding when a man thinks, including, that is to say, all objects thinks, inclinding that is to say, all objects of consciousness—precepts, images, and concepts. Hume limited the term to the mentally reconstructed images of perceptions, while he introduced the term impression? for the direct perception. This use of the term is still common in popular language. Kant defined is, called by him Transcendental is, as the product of the Resson (Vernice) of product of the Reason (Vernunff), of which they are the highest concepts, transcending the understanding, and therefore incapable of verification by experience. In the language of Hegel and the Idealists, the term almost returned to the Platonic algorithms as the platonic desiries near the state way. range before the time of Phry.

Idar, th. of Oldenburg, Germany, on
the Idarbach. Pop. 8000.

Idae (Gk. '16ac), in Gk. mythology, was
the son of Aphareus and Aroné, and
brother to Lynesus; he wooed Marpessa,
the Idaellets, the term almost returned to
daughter of the riv-god Kuonus, and
its Platonic significance, being used for
curried her off from Apollo, who also end of all things. See A. Schopenhauer, The World as Will and Idea, trans. 1883–1886; A. N. Whitchead, Adventures of Ideas, 1933; H. Heyse, Idee und Existenz, 1935; N. Hartmann, Zur Lehre vom Eidos bei Platon und Aristoteles, 1911.

Idealism, conception in philosophy which holds that ideas are the only things known. The conception is developed along different lines by various philoso-phers, among them being Plato, while later pners, among them being Patto, while later systems were evolved by Locke, Descartes, and Spinoza up to Berkeley, but perhaps the most widely known are those of Leibnitz, Hegel, and Kant. Broadly speaking, I. may be discussed under the two main systems of subjective I. (or, as it is sometimes termed. Spiritual Mona-dism or Pluralism) and Spiritual Monism.

Subjective I. was expounded by Leibnitz as a bolief that each individual mind exists apart from every other mind as a distinct unit living as it were in a universe of its own, so that nothing happening in another mind's universe is the same as that which happens in its own. We are aware, not of objects themselves, but merely of sensations produced by the objects which bring consciousness of them from our sensory disturbances. become aware of the sensation rather than the object. Thus we experience not things of the world, but our own feelings, which give us images and representations of the world of objects. This position is known as Representationalism. Berkelev and Hume and perhaps the Its. Croce and Gentile belong to this school. Berkeley shows that there is, at least to us, no ex-ternal world, since all we know is our impressions of matter. He says in effect its existence consists in its being per-ocived. This conclusion is strenuously criticised by Realists (see Realistal). Spiritual Monism differs from this theory, particularly regarding its sense of isolation of the mind. Hegel, with whom may be associated Schopenhauer and Bergson, though each has points of variance, shows that each individual mind is a part of a universal force, fused into the universal embrace of the spiritual force of which it is only temporarily individual, that its very existence depends upon its being part of a greater force, that no object can be said to exist without its having a relationship to other objects. It is a part of another whole, which in turn is a localised part of yet another whole, until, finally, the universal whole is comprehended. This is called by Hegol the Absolute, and is certainly a more congenial conception than the intellectual loneliness of the mind according to the Pluralists. This idea of the Oueness of the Universe is the chief inspiration of the Universe is the chief inspiration of theologians who call God what for Hegelis the Absolute, and what Schopenhauer terms the Will. But whereas Hegel's idea of the Universal Whole is purely intellectual. Schopenhauer's Will is of the instincts and is coaselessly and spiritually striving. Hergson, however, sees in his unity of all things unhowever, sees in his unity of all things undefference is an important one. Many ending change as its mainspring, and have held that, so far from excluding that there is nothing but change. claims that there is nothing but change,

and, therefore, matter always in process of change has not existence at any given time.

Kant's idealism challenges Leibnitz's and Berkeley's in that there is no evidence that we know our mind any more intimately than we know objects. We are conscious of ourselves only in knowing something not ourselves. He agrees that all knowledge depends upon perception, but insists further that this knowledge is always limited by the fact that we are that ominds controlled by a particular place and time. Thought can extend the range of perception which reveals an object as a part of a whole which stretches indefinitely beyond in space and time. For further detail of Kant's standpoint the render is referred to his Critique of Reason. Scholastic philosophy groups together all these systems under the term transcendental ilealism, to which transcendental ilealism, to which immanent idealism is opposed by the neo-scholustics. Their position is that the intelligibility of things is immanent in them, and through that intelligibility the mind comes into direct contact with the thing.

The word I, has also taken another meaning, of a purely literary nature-the expression of beautiful or optimistic temperament; in its results, it is unalogous to the more general asthetic idealogy of Cousin and Lessing. In this sense, such writers as Fogo zzaro, Maeterlinck, Shelley, etc., are idealists, apart from any consideration of their purely philosophical sympathies. See FIGHTE, JOHANNES;

synnathies. See Fight, Johannes; Hegel, Georg Willielm; Spinoza, Baru H; etc.

See E. Caird, Hegel, 1903; H. Bergson, Philosophy of Change, 1911; C. E. M. Joad, Mind and Matter, 1922; W. R. Inge, Personal Idealism and Musticism, 1924; E. G. Braham, Ourselves and Reality Personality in British and American Idealism from the time of T. H. Green, 1930. J. H. Mulrhead, The Platonic Tradition in Anglo-Saxon Philosophy; Studies in the History of Idealism in England and America, 1931; G. W. Cunninglam, Idealistic Argument in Recent ham, Idealistic Argument in Recent Philosophy, 1933; A. Liebert, Die Krise des Idealismus, 1936; R. N. Cross, Idealism and Rectism, 1945.

Identity, term with various connotations according as it relates to questions of logic or of metaphysics. The logical law of L is usually expressed by the formula A - A, or A is A. It is a necessary law of self-conscious thought, being, in fact, merely the positive expression of the law of contradiction, which states that a judgment cannot be true and untrue at various times, and that the same attribute cannot at the same time be affirmed and denied of the same subject. Without such a law no thinking would be possible. The philosophical question of I. is concerned largely with the various ways in which I. can be predicated, and to the exact connotation of the term. The question as to whether or not I. excludes difference, it actually implies it; in other

words, that I is not undifferentiated, but jout the will of the members of a society. differentiated, likeness the question, however, is one of the conceptions of philosophical atomism (See W. James, Principles of Psychology, 1890, and B. Bosanquet, Issays and Iddresses, 1889) The question of personal I that is to say, of 'the continuity of personal experience in the exercise of intelligent causal energy, the results being associated in memory, wis first brought into promisence by Locke (Fesan, bk. il., ch. xxvi), and soon occupied the attention of Hume and Butler. The first is that which distinguishes each person from other thinking beings, and with which the preservation of sunty is closely bound up Sec 1 Meyerson, Identity and Reality 150

Ideograph, sign or symbol representing an ide i Ideography may be considered as the second stage of the writing (see Writing) In ideography, the use of signs depicting concrete, a third objects (see Pictouniyii) is extended to express similar concrete concepts and analogous abstrict conceptions. In other words, the ideograph represents not so much the thing it shows as the underlying idea thing it shows as the underlying idea associated with this thing thus for instance, in eight in thing (q), the symbol depicting the star eine to represent also 'sky heiven,' god,' the idge five 'high and so torth and the ji to griph leg we il o the idea znaph for to 'to stand,' to bring the name of the object or its action is, however, the highest days the metric days the metric of the object of its action is, however. riting (q 1), the clos ly identified with the picture An a system of writing, ideography consists or definite pictures conventional and simplified, selected by agreement or custom from the many expects ental pictures

aborgines. An inercoed awareness of Mort soni (q.) first orned fine for her the importance of the individual began system by its astonishing success among with the (iks) and freeyample Aristotics seed children. Thos who begined the political philosophy depended upon 11s or of educating and treiting fots and belief that 'na ural mark was man in it in eq. Read, Howe and Seguin, society could be it indidinent men, it therefore 'is a joint all animal.' It is it can the value of 'it work and therefore 'is a joint all animal.' It is it to settlift nagged upon it is inestim-however noteworthy that Aristotle had all the been classified into ten dive, to admit of a class of slaves in order to allow etilization that it is to lead 'the good second to have much to do with the state, life'. The spired of Christianty come in the general cause his vert to be displayed the much upon the cost the intervaluable. physical the importance of the individual and at the sinct necrolyed the old I aw of Nature into the I swof Cod is the final standard by which the acts of temporal rulers should be judged. The danger of anarchy on the one hand et of ecclos domination on the other, was met in practice by the emphisis laid upon the absolute power of the tuler. This in its turn, was countered by the theory of the Social was countered by the theory of the social Contract as the basis of security, which, however unhistorical, became a powerful weapon against authoritarian rule in the hands of John Locke and others. The conduct of modern times has been, basically, between these who conceive of the State merely as a machine for carrying-

and these who, deriving from Hegel, con ceive of the State as an organism greater than the mere sum of its members and possessing a personality, the individual inde full satisfaction in sinking his will into that of the State. To the latter into that of the State 10 the latter group belong totalitarian systems to the former, democracies The Communist position is somewhat anomalous, the idea that the State should ultimately wither away would seem to be a denial of Hegeliunsm, whereas in practice, an authentian in system would seem to result from the identification of the will of the pecile with one political party

Ides et (Alland, Idfu, et l'oft

ldiocy or mental deheiency or extreme stupidity dep inding upon malnutrition or di cisc of the brain occurring either before buth or before the evolution of the mental faculties in childhood, while imbeellity is generally used to denote a less decided degree of such mental me ipacity? Thus I did is from meanity in that one in the i thir condition never his been same while one in the latter has I diots yars while one in the latter has finithe chaving no power of speech, of ene firthemselves, of distinction between two persons with no feelings of love or hat the sure or pain who are usually dwarn handly, and mishapen, and who small have cannot even valle, to those who we often be outiful and normally developed five ally, but who lack some mental faculty or intelligence affection or control. The large majority of mentally defrient art, he wester, physically unit in s in way or another, and are liable to certin discusses, such is consumption, rilet and scrobila. Idiot are not all Ideology the system of political and second and second all all of are not all social ideas upon which a community or state 1 based. The I of primitive path I the most wonlerful of trides seem to have rested on a sense of lan or 1 d in the mothods of dealing with tribe as deal that of present dividend the methods of dealing with aborigines. An increased awareness of Wirt social (q 1) first a mediand for her first more trive of the introduced of the mothods of sealing with aborigines. Undoubtedly in many cases it vered is hereditary, and con a guine marriages in a cause it but only in those cases where the stock is bad. It is been suggested that consumption in parents may cause the state to arise, in his known that finds to mothers when pregnant sometin result in the both of an idiot the other hand, I does occur in what it iwise appear to be healthy families. In the idiots and imbattles are regarded as being irresponsible for their actions. also CRETINISM. See Dr. W. Ireland, Idrory and Imbeculty, 1877 | F. MacCurdy, Pro and Imbeculity, 1877 1 F MacCurdy, Problems in Dynamic Psychology, 1921; and W. S. Dawson, 4ids to Psychiatry, 1931 Idiocy, for legal sense see LUNACY.

England, situated near the Aire, 9 m. from Leeds. It manufs. woollen goods. Pop. 7873.

Ido, or Revised Esperanto, is, as its name implies, the offspring of Esperanto (q.r.), the international auxiliary language. origin of I. is, according to its partisans, to be found in the Delegation for the Adoption of an Auxiliary International Lan-guage, founded in 1901. I., does not claim to supersede Esperanto as that tongue superseded Volapuk, but merely to sim-plify, regularise, and improve it. The two chief alterations effected are the doing away with all accented letters and the suppression of a few grammatical rules (e.g. accusative case, agreement of the adjective) which the partisans of I. con-

sider unnecessary.

Idoorase or Vesuvian, mineral consisting essentially of silica (37 to 39 per cent), alumina (13 to 61 per cent), and lime (33 to 37 per cent), together with a small percentage of oxide of iron, magnesia, and water. It occurs in the form of short tetragonal crystals, which show a large number of faces (sp. gr. 3·1, h. 6·5). The mineral has a vitreous lustre and varies in colour from brown to green. It was first found in dolomitic blocks ejected from Vesuvius, but occurs also in granular limestone, serpentine, gueiss, and other metamorphic rocks. The finest specimens come from Siberia, Piedmont, and Norway, and are cut, polished, and sold as chrysolite or jacinth.

Idolatry (Gk. ετωλου and λατρεια, idol-worship), worship paid to images or other objects supposed to be the abode of a superhuman personality. The term is sometimes used generically to denote all forms of worship of visible and concrete, as opposed to unseen, existences, thus including litholatry, pyrolatry, zoolatry, and the like. St. Paul uses to express worship of false gods, and the whole heathon cultus (see Gal. v. 20: 1 Cor. z. 14: 1 Pet. iv. 3). Regarded by the early obvious as a desergence for from a higher church as a degeneration from a higher primeval faith, it has since been shown rather to mark a stage of upward movement and progress in religious growth. While and progress in religious growth. While absent among Hottentots, Fuegians, Veddahs, Bushmen, and others, I. was extensively practised among the great civilisations of old, by Egyptians, Chaldeans, Indians, Gks., Roms., Mexicans, and Peruvians. Relics of this worship remain in the 'nirgalli' (Images of monsters), common outside Chaldean palaces. Into these it was believed that maignant stricts with as those of disease would spirits, such as those of disease, would enter. Statues and idols connected with the worship of the dead were common among many peoples. The Maori 'atua,' or ancestral deity, was supposed to enter his carved wooden image on the incantations of a priest, and to deliver oracles. The earliest stages of I. are Naturiam and Animism. Fetichism, a degraded form of the latter, is often the direct antecedent Private and personal idols or

Idiosynerasy, converse of antipathy fetiches, like the Heb. teraphim (see (q.v.), being a strong disposition towards Gen. xxxi. 19, 31; 1 Sam. xix. 13), are certain things
Idio, tn. of the W. Riding of Yorkshire, antional idols are a late development. The human figure came to be the predominant model. Images were probably intro-duced among Christians in the second century, and are often found in Christian tombs in the Rom, catacombs. In the sixth and seventh centuries abuses crept A reaction arose against I. in the E., m. culminating in iconoclasm (c. 726). A characteristic of I. is its tendency to revive even after the introduction of purer spiritual ideas. Thus the Israelites were apirtual ideas. Thus the Israelites were often in danger of relapsing from monotheism (see Exod. xxxii.; 1 Kings xi. 5; xu. 23; xiv. 15, 23; xvi. 32). The Rom. Catholic and Uk. Churches still revero images of the Virgin and saints, though of course this subject should hardly be dealt with under I. The Reformers and Calvinists repudiated this practice, but Inthe alloyed images as possibly heloful. Luther allowed images as possibly helpful to devotion. See also IMAGE-WOISHIP; RELIGION. See the works of J. Voss, A. van Dale, H. Spencer, Sir E. Tylor, T. Waltz, V. Schultze, A. Réville. See also K. Kraus, Roma Sotteranea, 1879; G. D. Alviella, 'Los Origines de l'Idolatrie' in Recue de l'histoire des Religions, XII, 1845; J. Lippert, Culturgeschichte, 1886; A. B. Lubbock, Origin of Civilisation, 1902; J. Hastings, Encyclopaedia of Religion and Ethics (vol. vii.), 1914.
Idomeneus, son of Deucalion, king of Crete, and grandson of Minos. As king Luther allowed images as possibly helpful

Crete, and grandson of Minos. As king of Crete, he led eighty ships to Troy and played a leading part in the battle, being described in Homer's Iliui as one of the mightiest of the heroes. In later writers he is represented as vowing in a storm. provided he arrived safe home, to sacrifice to Poseldon whatever he first met on landing. The victim was his son, whom he accordingly sacrificed, and his subjects, in consequence, drove him forth. He wandered in Calabria and Italy, where he estab a shrine of Apollo near Colophon

when he died and was buried.

Idria, or Idrija, tn. and com. of Istria, Yugoslavia, 26 in. N.N.W. of Trieste. There are quicksilver mines in the vicinity which have been worked since the sixteenth century and lace manuf. 10,500.

Idris, mythical figure in Welsh tradition who had his rock-hown chair on the summit of Cader Idris. He was supposed to have the power of conferring poetic inspiration, and of inducing madness or death.

Idris, see ENOCIL.

Idrisi, Abu Abdallah Mohammed El-, sce EDRISI.

Idumæa, see EDOM.
Idun, or Iduna, name of a goddess in
Norse mythology. She was the daughter Norse mythology. She was the daughter of the dwarf Svald, and became the wife of Bragi. She personified the reviving year, being imprisoned in the nether world by Thiassi (winter), from whom she escaped, and appeared again in the shape of a bird in the springtime.

Idyll (Lat. idyllrum, a little image), word

used to describe a species of poem repre-

senting simple scenes of a pastoral life, not, however, exclusively used for poems of a pastoral character. Tennyson, for example, in his Idylls of the King, presents an epic style and treatment, the incidents portrayed being of a romantic and tragic nature. Theoretus, too, in his Eidyllia (thirty in number), wrote less than half in the pastoral form. leper, see YPRES.

lerne, see HIBERNIA.

Ierugena, Johannes Scotus, sce Ent-

lesi, or Jesi, tn. of Italy in the prov. of Ancona, situated on the l. b. of the Esho, 17 m. S.W. of Ancona. It is noted as the bp. of the Emperor Frederick II., and possesses a fine cathedral. Pop. about

16,000.

If, islet of Bouches-du-Rhône dept.. off the S. coast of France, opposite Marseilles in the gulf of Lyons. It was one covered with yews ('15'). Its fortress. Château d'1f, built by Francis I. (1629), is famous. It was used as a state prison later, Mira-beau and Philippe Egalité being im-prisoned there. In Dumas's Count of

prisoned there. In Junior Many Cresto the bero is confined there. Iffland, Augus' William (1759–1814), Ger. actor and cramerist, b. at Hanover, and educated for the ministry. In 1796 he became director of the Berlin National Theatre, and subsequently superintendent Theatre, and subsequently superintendent of all the royal theatres, the Berlin stage reaching its highest point under his management. Among the best of L's plays are (titles trans.). The Backelors (1799), The Foresters (1799), The Lawyers (1799), The Nepheus (1800), Crime from Ambiton (1800), and Conscience. His dramatic criticism is to be found in his Almanach fur Theater und Theaterfreunde (1815), and his Thorre der Schausmellung (1815), and his Theorie der Schauspielkunst (1815). See his collected dramatic works, 1844; Duncker (ed.) Iffland in seinen Schriften, 1859, and Iffland's Berliner Thealerleitung, 1896, and monograph by E. Kliewer, 1937.

Ifni, scaport tn. and dist. of W. Morocco. Africa, 35 m. from Aguilon, opposite the Canary Is., ceded to Spain by Morocco in 1860. By the Franco-Sp. agreement of 1912 it extends along the W. coast of the N, of Wadi Dran and a distance of 15 m. inland from the coast. Pop. chiefly en-gaged in fishing and cultivating garden produce. Area 965 sq. m : pop 20 000 produce

Hrit, Hreet, Afrit, or Afreet, in Arabie folklore, ogre of an evil disposition.

Igel, vil. of Rhineland, Germany, 3 m.

S.W. of Trier. It contains the celebrated I. obelisk, or Heidenthurm, a sandstone monument 75 ft. high, one of the most remarkable Rom. relics N. of the Alps. This was a funeral monument of the

Secundin family. Pop. 700.

Iggdrssil, see YGGDRASIL.

Iglau (Jihlawa), tn. on the Bohemian
frontier of Moravia, Czechoslovakia, 123 m. N.N.W. of Vienna, on the Iglawa. Manufs. include tobacco, plush, woollens, cloth, glass, and nottery. It was a mining centre in the Middle Ages, silver being worked from the eighth century. A treaty onding the struggle between Sigismund and the Hussites was signed here (1436). More reliance is to be placed on the earlier

In 1805 the Austrians defeated the Bavarians here. Pop. 23,400.

Bavarians here. Pop. 23,400.
Iglesias, tn. and episcopal sec of Cagliari prov., W. Sardinia, Italy, 32 m. from Cagliari. The chief mining centre of Sardinia, it has zinc and leaf mines. There is a cathedral (1285), an old castle, and a bishop's palace. The tn. is partly surrounded by walls, and its citadel dates from 1325. Malaria is prevalent. Pop. 21, 800 21,800

Iglesias de la Casa, José (1748-91), Sp. poet, a native of Salamanca. He first wrote satiric ballads, epigranis, and 'letrillas' directed against contemporary society and morals. He entered the church church (1783), becoming priest of Larodrigo, and then of Carbaiosa de la Sagrada. His later works contained much theological discussion. I. is often ranked with Quevedo (1580-1615). His Collected Poems first appeared in 1798. In 1802 Grows first appeared in 1798. In 1802 some of them were put on the Index. See G. Ticknor, History of Spanish Literature, 1819; H. W. Longfellow, Poets and Poctry of Europe, 1819; C. Real de la Riva, Iglesias in Salumanca, 1931.

Iglo, tn. of Hungary, in the co. of Zips, situated on the Hernad. It has iron and copper smelting works, a linen and flax. Pop. 9000. and a trade in

Igloo, F-kimo hut. Built for temporary habitation during the winter season, the buts are frequently constructed merely of blocks of ice piled high in a dome.
Igloolik, small is, of N. Canada, situated

in the Arctic Ocean, in Fury and Hocla strait, in lat. 69° 21' N., and long. 81° 53'

Ignatiev, Nikolai Pavlovitch (1832-1906) Russian general and diplomatist, b. in St. Peter-burg, and the son of Gen. Paul I., a favourite officer of Alexander II. He was educated in the corps or pages and exchanged from the military to the diploexchanged from the mintary to the diplomate service in 1856, having served in the Cruncan War and been made a colonel and mator-general. In 1853 he was made diplomatic attaché to Gen. Muravieff, rovernor of E. Siberia, and negotiated the treaty of Aigun with China, by which the region of the Amur came into the posses-sion of Russia. Two years later, he was sent as plenipotentiary to Peking. In 1863 he was placed at the head of the Asiatic dept. of the ministry of foreign attairs, and made adjutant general of the Czar. He was an active agent at the out-break of the Russo Turkish War in 1877, and the treaty of Stelano was largely his At the close of the war he fell into work. disfavour and retired from office. On the accession of Alexander III., however, he was made minister of the interior, but was discussed in 1882 for permitting the persecution of the Jews.

ignatius, bishop of Antioch, one of the apostolic Fathers, perhaps the most remarkable of all the figures of the century immediately following the Apostles. Very little, however, is known about his life, and about his birth and parentage nothing is known. A late tradition says that he was the little child whom Our Lord placed. as a pattern in the midst of the disciples.

tradition which speaks of him as the disciple of St. John the Apostle. Euseblus also tells us that he was the second successor of St. Peter in the see of Antioch. Later traditions are so untrustworthy that we are forced to rely entirely on the internal evidence of the letters which I. wrote. These were sent from various cities at which the saint stopped as he was being hurried to Rome for martyrdom (A.D. 115-117) during a persecution which arose at Antioch in the reign of Trajan. The letters themselves present a most difficult critical problem, which now, however, after the labours of Zahn, Lightfoot, Harnack, and others, seems to have reached a satisfactory solution. The difficulty is brought about by the fact difficulty is brought about by the fact that three widely-different recensions of the letters exist. The short or Vossian reconsion consists of seven letters, the number which Eusehus ascribes to 1. They are written to the Ephesiaus, Magnesiaus, Tralliaus, Rouss, Philadelphiaus, Surarneus and to Polycum is recentification. nessas, trainans, from the control of the control o and sev. others in addition, six in the Gk. form, and ten in the Lat. Finally there is the Syriac or Curetonian recension, containing only three epistles, viz. those to the Roms, the Ephesians, and Polycarp, all in a shortened form. Much controversy has taken place as to which of these recensions was to be regarded as the genuine work of I. The arguments genuine against the long recension are conclusive and scholars are now generally united in upholding the claims of the Vossian recen-The Syriae recension is to be regarded as an abbreviated ed. of the seven epistles, and not as the original and un-expanded form. The letters are directed against Gnostic and Docetic here sy, laying great stress on the duty of adherence to episcopal authority, and the escential episcopal authority, and the essential nature of the episcopal office. See works by T. Zahn, J. Lightfoot, F. Funk, A. Harnack; M. de Wulf, History of Medie-ral Philosophy (trans. by E. C. Mossenger). 1926; H. W. Bartsch, Gnostickes Gut und Gemeindetradition bei Ignatius ron Antioch, 1940.

Ignatius, Father (1837-1908), name, as a religious, of Joseph Leyer-ter Lyne, as Englishman who devoted his life to an attempt to revive the Benedictine life in the Church of England. In 1870 he founded a community of Lianthony Abbey, near Abergavenny, but his attempt having been made without any reference to eccles, authority, it came to an end after his death, the property passing to the Benedictine community of Caldey, of which the greater number second in 1913 to the Church of Rome. F. I. was a great preacher, and his mission sermons in London attracted large numbers.

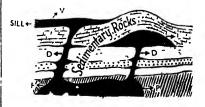
Ignatius, Saint (c. 800-878), Patriarch of Constantinople, was the son of Michael I., emperor of the E. He was compelled to enter a monastery, whence he rose to the patriarchate through the favour of the

Empress Theodora.
of the iconoclasts. The influence of his
brother Bardas, whom he had excommunicated, led to his being forced to abdicate
in 466, but he was restored in the following
year.

Ignatius de Loyola, see LOYOLA, IGNATIUS

DE, and JESUITS.

Igneous Rocks include all those which at some time in their hist, have been in a molten condition. Their differing physieal characters, which are largely dependent on their rate of cooling, suzgest one form of classification into: (a) Volcame, in which the rate of cooling has been comparatively rapid, so that the crystallisa-tion is by no means perfect, hence this kind contains large quantities of glassy material; (b) plutonic, in which the cooling has been extremely slow, so that the crystallisation is almost perfect, hence there is little, if any, glassy material present. Between these two in nature there is seldom any strongly marked line of separation, for they mergo into one another, and the dyke rocks may be defined as of the intermediate type. In the diagram, P represents the deep-scated



plutome rocks. D the intrusive dyke rocks, later in age than the rocks they penetrate, and forming dome-shaped ha colitis. L in certain areas. V indicates the volcanical layer, effusive or cruptive rocks. Thereform sills which are contemporaneous with the sedimentary rocks they overlie. Examples of such sills occur in the N.W. ters. of N. America, in Iceland, the Faroe Is., the Decean, Abyssinia, and fragments in Ireland and Scotland. Large shapeless masses (bosses) of plutonic rocks become exposed through the denidation of overlying rocks. These outstanding masses may be seft by the weathering removal of surrounding material from the solidified layer in the nock of a volcano. Many such necks or coros remain, e.g. in Scotland, as rolles of past volcanic activity. I. R. are chiefly composed of oxides, as silica, alumina, iron coxide, ime. magnesia, etc.; in consequence a frequent classification of such rocks depends on their chemical composition and more particularly on the percentage of silica prosent, A brief summary of such a grouping follows:

1. Acid igneous rocks, containing from 66 to 80 per cent. of silica. The plutonic example is granite, a holocrystalline rock containing the essential minerals, quartz, felspar, and mica (generally muscovite). The glassy, rapidly-cooled, volcanic representative is obsidian, which resembles bottle glass in appearance. The hemicrystalline variety is called rhyolite. The two latter have roughly the same chemi-

cal composition as that of granite.

2. Sub-acid intermediate rocks, containing from 60 to 66 per cent of silica. The essential constituents of these are ortho-clase and hornblende, the latter of which may be replaced partly by augite or maca. Representatives in the same order as those of the first group are syenite, trachytic pumice, or trachyte glass, and trachyte. The trachytes bear much the same relation to the syenites that the rhyolites do to the granites.

3. Sub-basic intermediate rocks, containing from 55 to 60 per cent. of silica. The essential mineral constituents are placiochatic felspar (usually oligoclase or labradorite) and hornblende, which may be replaced by augite or mica as in the case of the syemtes. Representatives in order are diorite, andesite glass, and andesites. The andesites occur in enormous masses in the Andes Mts., and are perhaps the most of meantly found of all

the I. R.

1. Basic rocks, containing from 15 to 55 per cent of -ilica, i.e. the acid-forming oxide is less in amount than the basic oxides. In this case the essential min-oral constituents are plagiculastic felspar (usually labradorate or anothite), augite, and olivine. Magnetite is always present as an accessory. Gabbro is the holo-crystalline plutonic representative. The glassy example is tachylite or basalt glass, while the hemicry stalline rock is basalt. In this group rocks called dolerites are intermediate in position between the

gabbros and basalts.

5. Ultra-basic rocks, containing only 35 to 15 per cent of silica, are very rich in olivine, which readily decomposes and causes the rocks to change quickly into some variety of the scrpentines. Members of this class of ultra-basic rocks are also called Peridotites, e.g. Picrites, Cherzolite, and Dunite. Chemical analysis is, of course, impossible in the field, so that if it be necessary to classify the rock on the spot, it is usual to adopt some form of mineralogical grouping. Sov. systems have been proposed; one which is worked out very fully by J. J. Harris Teall is des-cribed in his British Petrography (1888); a very brief summary of crystalline rocks would include. (a) Rocks of ferromagnesian minerals, e.g. olivine, angite, horableado, blotite. Felspar is not present as an essential. (b) Rocks in which the felspar is essentially plagioclastic. (c) Rocks in which orthoclase is abundant. (d) Rocks containing nepheline and (or) leucite, both of which are absent in classes (b) and (c). (c) Other rocks not in the above four classes. Special classes are reserved for vitreous or glassy rocks, and also for fragmental volcanic rocks which may vary in texture from fine dust to large masses of scorks.

Distribution of typeous rocks. The

older I. R. occupy but a small aliquot part of the whole surface of the earth, nor are the existing masses of great extent. will be more readily understood when it is remembered that the exposure of plutonic rocks can only be brought about by immense carth movements and fractures, or by denudation removing the overlying strata so that the crystalline rocks may be exposed. In the case of the younger I. R. of the lava and fragmental types, these are being produced at the present day along the lines of volcanic activity, as, for example, in the Pacific girdle. Regions of extinct volcanoes also contain varying amounts of eruptive rocks, as in the case of the Auverane plateau of France and the Enfel mits, of W. Germany. By reference to a geological map the reader will readily identify the very numerous and widely scattered small masses of these rocks which exist on the surface of the globe.

Disintegration of igneous rocks .- Notwithstanding the hardness and compact character of those rocks, they are particularly subject to the weathering agencies. Chemical and mechanical analysis proves that all the materials building up the sedimentary rocks can be produced by the disintegration of the I. R., and, undoubtedly, many of the sedimentary rocks have been formed from such disintegration products. Chemical action takes place between the carbon dioxide of the atmosphere and certain compound silicates which results in the production of soluble carbonates and free silica, which latter may also be in a soluble form. Rain-water removes these products, and a mechanical disintegration follows. In the case of granite, the quartz is a simple compound, modable and consequently but little altered; on the breaking up of the granitic mass it is generally removed bodily by weathering agencies, and re-deposited to give a series of silicrous sedimentary rocks, e.g. sands, gravels, sand-stones. The felspar is subject to the chemical changes outlined above, which is termed knolinisation on account of the product kaolin or China clay which is composed of hydrated aluminum silicate separated from the felspar. The decomposition of the feispar results in the production of argillaceous sedimentary deposits, e.g. muds, clays, shales, together with soluble shea, which may be extracted by plants and animals, e.g. diatons and radiolaris, to build up their framework; the result-ma carbonate in each case will be dependent on the particular felspar which is decomposing; another will yield calcium carbonate, which in its turn may be extracted from its solution, and deposited to torm new strata of corals, chalk, limo-stone, etc. The mica suffers but little decomposition, and is usually re-deposited almost unaltered.

Ignis Fature (Lat., foolish fire), luminous appearance occusionally seen in marshy places and churchyards. It is usually visible shortly after sunset in autumn, and has been recorded in many countries. The light, which resembles a flame, is seldom pure white, and may be red, given, blue, or sellow Accounts differ greatly some observers speak of it as being fixed and others as moving Experiments have proved that it is not due to true combustion. The ories explaining its occurrence have been in turn discredited. These include the burning of methane or marsh gas, phosphuretted hydrogen, and phosphorescent vapour Many local names are given to the phen omenon, e.g. Will o the Wisp. Jack a Lantern etc. and its manifestations have given rise to a waith of story and legend.

Ignoramus (1) Word formedly witten on a bill by a grand jury (see Ind ICTMINT JURY) to usually that they ignored the bill on the ground that there was not sufficient evidence to authorise them in finding a true bill. I later they in dorsed the bill in I ng 'Not Lound' No Bill or with similar words. (2) Ignoring person especially an ignorant pretender to knowledge. In this councition the word was probably an extension of its appropriate legal incaming. Many writers notably Beaumont and Carlyle are found of using the word in a personified sense pryden in his Duke of Guise pure on the legal sense, thus 'Let ignoramus juries find no traitors, and ignoramus juries find no traitors, and ignoramus juries soribble satures. The idea of Dryden satire called The Widal which appeared in 1682, is said to have been singrested to him by Charles II 131 reply to the striking of a medal in honour of the I of the grand jury in throwing out a bill against Shaftesbury, always a butt of the poet laureate.

Ignorance, in law It is a legal maxim that I of a law is no excuse for breaking it however prai eworthy the motives of the lawbreaker. This maxim is said to rest on the legal prosumption that every man knows the law It would be truct to say that grounds of public policy have di-tated the necessity of thering to such a maxim. I of fact is different for example, if a man whose wife was living left her and married another woman under the impression that it was liwful in certain circumstances to have two wives would be guilty of big inv but if he did so under the impression that his first wife was dead, he would in all probability be excused. There are how ver dieta to the effect that the rule is not universally applicable at all events where no crime has been committed or during inflicted and that a judge in a court of c justy will be influence I by a plea of I

Ignorantines, name of a religious finter it in the Rom Catholic () arch in quality known as the (hristian B) offer founded at Rheims (1679) its am being the gratuitous instruction of poor hildren in both sacted and secular learning. It was organised (1683) by Jean Bartiste de la Salle The order has now spread over the whole world The brethen take vows of chastity obedience, and poverty, but do not enter holy orders. Their official title is the Brothers of the Christian Schools.

Igualada, tn of Barcelona prov, Spain, on the Noya, 32 m N.W of Barcelona. Pop. 10,500.

Iguana, genus of tropical Amer lizards, of the family Iguanida, comprising about fifty general to 100 species. Nearly all the general belong to the New World, occurring us fully by Patagonia and in a northward direction as far as chifornia and But Columbia and most of them are arboral though some live on the surface of the and and stones of the desert. They



IGUANA

I are known mostly from the Wealden are characterised by the Jeculiar form of them teeth which are round and blinde like it the root with screated edges towards the tip. One of the most common species is the Iguana tuberculata with a large dewl p and a bush dorsol fringed ridge. Then prevailing colour is green and they differ greatly in size from a few inches when they have been seen and they differ greatly in size from a few inches when the business in the limbs of frees, when they are a because the bead them of a neso thrown over the head them first being esteemed as foot 1 of the similar fundly being the business, and the hand toud see If 1 Godow, Amp hina and Leptiles, 101

Iguanodon (Iguin) and Ck 5 s, tottl) genus ef ormthopod dinosaurs, found f sail in Jura sie and I ower Creta ee u tels of luope the I was des-ented by Mantell in 182 from specimens found in Kent Inglint I these from I to a ft long the head large and nar w in I the in issue bedy terminated in a long and very strong tall The forehind a were small and adapte I for grasping the leaves in I branches of flants on which it fed. All the bones were hollow. The structure of the skeleton is altogether very ren urkable The front parts of both upper and lewer jave are without teeth, and suggest a hollow, beaklike arrange-ment The I walked on its hind legs, and sat on a tripod formed by these and its tail after the manner of the kangaroo Its forefact had four toes and a spur, and were much shorter than the threetoed had limbs It lived in grat numbers in the swampy regions of England and Helglum and other parts of Europe, during the Jurassic period Sev. species of the

and Purbeck beds. Twenty-nine fossil skeletons of the reptile were found at one time in Upper Jurassic sandstones of the coal regions at Bernissart in Belgium. coal regions at Bernissart in seiguun. See G. A Mantoll, Petrifurions and their Teachings, 1851; A. Woodward, Outlines of Vertebrate Palwonblogy for Students of Zoology, 1898; H. N. Hutchinson, Extinct Monsters, 1892; Sir R. Owen, Fossil Reptites (4 vols.), 1849–81, ctc. Iguassú, ter. of Brazil, in 1913, a belt of land around Brazil, part of sev. states, use taken over by the Federal Goy, and

was taken over by the Federal Gov. and placed under the direct administration of the President. I., which had a pop. of 103,500, and faced the Misiones prov. of Argentina, was restored in 1916 to its constituent states.

Iguvine Tables, see EUGUBINE. Ihering, Rudolf von, see JHERING. Iilithyia, see KILITHYIA.

lilithyia, see killthyta.

Ijmuiden, see YMUDEN.

Ijssel, or Yssel (anct. Isala): (1) Riv.
of Holland, Gelderland, and Overtissel
provs., the northernmost arm of the
Rhine delta, leaving the mainstream near
Arnhem and flowing N. into the 19sel
Meer (Zuyder Zeo) (E.), past Zutphen,
Deventer, Zwolle, and Kampen. The
upper part was i imally a Roin, canal
made (c. 12 R.c.) to unit, the Rhine with
the Oude Ijssel, which joins the Nieuwe
at Doesburg. Length about 70 m., all
mawigable. There was stubborn fighting at Doesburg. Length about 70 m., all navigable. There was stubborn fighting on the riv. in 1945, Deventer falling to the Canadian and Brit, forces on April 10 and Zutphen soon afterwards. By the 21st the whole area of N. Holland had been cleared of Gers, as far as the E. shore of the lissel Meer. (2) Riv. of Utrecht and S. Holland provs., connected by canal at Utrecht with the Oude Rijn, and entering

the Nieuwe Mass 3 m, above Rotterdam.

Ijssel Meer, see HOLLANDAND ZUDER ZEE.

Ijsselmonde, or Ysselmonde, is, of
Rolland, in the prov. of S. Holland, between two branches of the Mass and the Oude and Nieuwa Maus, opposite Rotterdam. It is 15 m. long by 5 m. broad. There is a tn. of the name on the is.

Ijzer, sce YSER.

Ikhmim, see Akumim.

Ikhnaton, see Akhnaron.

iki, is, belonging to Japan, lying off the N.W. coast of Kinshim. There is a harbon at Gonoura in the S.W. Area 57 sq. in. Ikuno, ta, of Hondo, Japan, 35 m. N.W.

of Kobé. Its silver mines, the second in size in Japan, are worked by the gov.
II, an administrative div. of Turkey. In

rumbering 63), subdivided into I. (now rumbering 63), subdivided into Ilee, and further into Bucak. Each I. has an elective council, and at its head a Vali representing the Gov. The Bucak is an autonomous entity, the Ilee being merely a grouping of these for some general administrative purposes.

Ilagan, call, of the provestive of Value and ornamental tree and for its first f

ministrative purposes.
Ilagan, cup. of the prov. of Isabela,
Luzon, Philippine 1s., about 200 m
N.N.E. of Manula. It is in a great
tobacco-growing dist. Pop. 23,300.

ant Rom. station and a flourishing Saxon tn. Lytes Cary, a fine fourteenth-century

n. Lytes Cary, a fine fourteenth-century house near I., is owned by the National Trust. Pop. 500.

Ildefonso, Saint (607-67), Sp. prelate and theologian, b. at Toledo: was a pupil of St. Isidore, became abbot of Agali, and attended the ninth council of Toledo in 653. In 657 he succeeded his uncle Fugorities as a schibtshop of Toledo. uncle Eugenius as archbishop of Toledo. He added fourteen lives to St. Isidore's De Viris illustribus, wrote sev. theological works, and was responsible for the unitication of the Sp. liturgy.

lle de Bourbon, see RÉUNION.

He-de-France: (1) prov. of France, forning a kind of is bounded by the Rs. Scine, Marne, Beuvronne, Thovo, and Olse, and with Paris as its cap. Under the Revolution redistribution of provs. it was divided into the dept. of the Seine with the greater part of Seine-et-Oise, Seine-et-Marne, Oise and Aisne, and a small part of Loiret and Nièvre. It is a prov. of forests and plains, fertile and prosperous, with carefully tended mrkt. gardens and orchards. Its prin. indus-tries are wine and the sugar bestroot. In the middle of the ninth century I. was made a dukedom and its second duke, Odo, became king of France in 888, and was the ancestor of Hugh Capet. I. was the former name of Mauritius (q.v.). (2), or fle d'Orléans, is. on the E. coast of Greenland, for the greater part covered with glaciers.

lle-du-Diable, one of the fles du Salut oil the coast of Fr. Guiana, S. America, on which Capt. Dreyfus (q.v.) was imprisoned in 1891.

Herda, cap. of the Hergetes in Hispania Tarraconensis. It stood upon an emi-nence on the r. b. of the R. Sicoris. It was used by the legates of Pompes as their base against Caesar in the first year of the Civil war (49 B.C.).

lletsk, the of Orenburg, Soviet Russia, near the confluence of the lick with the tight. It is famous for its must and brine baths and koumiss cures. Pop 7000.

Heum, lower part of the small intestine. The small intestine is a tube about 23 ft. long, the first 10 or 11 in, form the duodenum, the next 9 ft, form the jejunum, and the remainder is the I. There is no definite line of div. between the two main portions, but the journam occupies the upper and left part of the abdomen, while the I. occupies the lower and right.

hely in Central Europe; it is valued as an ornamental tree and for its fine-grained, heavy, compact timber; the berries are poisonous and have violent ometic effects. 1. Paraguagensis, the mate plant, is valued for its leaves, which to bacco-growing dist. Pop. 23,300.

Hichester. mrkt. tn. in the S. parl. div. of Somersetshire, England, on the R. Yeo, fm. N.W. of Yeovil. It is supposed to be the Ischalis of Ptolemy; was an importMediteriancan

Medite ritindan
Hord. (1) (Great), par. and bor on the
Roding in 5 W. Essex, 7 m. E.N.E. of
London The hospital of 5t. Mary and
5t. Thomas originally founded in the
tweltth century as a leper hospital, 18 now twenth century as a leper no-pith, is now composed of alms houses and a chapel It has photographic material factories and paper mills. Pop 130 500 (2) Little I on the opposite bank of the Roding Pop about 15,000 Hifracombe, scapoit, mikt tn, and popular with the popular with the popular with the popular with the scale of its scenery and the temptions of its scenery and the temptions of the second popular with the scan burnet make its factorial with the scan burnet with the

ate climate make it a favourite resort both in winter and summer. It has steadily grown in importance of late years and constant improvements have been made, Pop 4900

species of Fagacese found round the Balkash, into which it falls by seven months after a total course of 750 m. Its chief tribs are the kash (hilk, and Charri Its valle, is rich in coal, gold, and silver See also Kills Iliad, see under kill (l'Ollri Homer.

llianina, volcano in Alaska N America, at the head of the Alaska Peninsula W of cook Inlet It was in cruption in 1901 and 1902 Alt 12,000 ft

lligan Bay, on the N coast of Mindanao, Philippine 1s. The R lligan flows into it at the S k corner and here her the tn

and hemp Pop 6000

Then mytha large trade in tice, spices, and hemp Pop 6000

Thou, in of firthmer co New York, United by the bank of the Mohawk R., 12 m > 1 of t tica. Its chefundustry is the manut of Remmston typewriters



ILFI ACOMBL

Lit tsh

such as large semi artificial bathing pooletc. It is connected by a good strument service with all the stande the of interest in S Wales and the neighbouring cos In the fourteenth century it was a place of importance and supplied six ships and ninety six men for the slige of (alas-(1347) It was besieged twice during the civil war In 1782 a large to talk we sail belonging to the Franco op fleet taken by Rodney was wrecked in Rapparce (ove. and at various times since gold and silver pleces have been washed ashere. In 1797 four Ir ships entered the harbour and sank all the vessels lying there I has declined as a port since its prosperous days in the fourteenth century. Pop. (1931) 9200

Ilhavo, vaport in the dist of Avero, Pottugal 40 m S of Oporto Its chief industry is it hing, but there are famous glass and por clain works at Vista Alegre Balt is also exported Pop about 13,000

Batt is associated from about 13,000 lli, one of the chief rive of Russian Central Asia in the Issyk kul Rusion of the Kirshit > R It rises at an altitude of 11,600 ft on the W. slopes of Mt. Kashkatur, E of Lake lesyk kul, and flows in a twisted course past Kulja in binking, through the Frans III, Ala tau, and Borok-

Inpa, Battle of, scene of Hasdrubal's defeat on the Metaurus 207 BC when histein g to bring Hamibal relatorement.

Hissus, mall riv of Attica flowing into the corner the Lucius. It was unmorthised for its beauty by Plato in I hadra. In the beauty by winshed and the senery become barren and sunsecrebed.

Ilium, se I Roy

likeston, mrkt to and municipal bor of Derbyshire England 9 in 1 N E of Derby It i on a hill commanding the fine valley of the krewash. It manufa hosicry lace and carthenware (oal and

hosiciy lace and carthenware Coal and from one found in the neighbourhood, and an alkaline in meral spring. Pop 31,100.

Ilkley, he lith resort in the W. Ridling of Yorkshite I ngland on the R. Wharfe, 16 in N. W. of Loeds. There are sev. hydropathic estabs. It was an anot Rom. station and possesses three curious Saxon crosses. Bolton Abbey (g. 4.) is 5 in. N.W. Pop 9700.

Illampu, or Sorata, peak in the Cordillera Real, a intrange of Bolivia. Alt. 21,27 of the same coal series of New S. Wales.

Illawarra, dist of New S through the frans ill, Ala tau, and Borok. Australia, extending from a point 33 m. horo Mts., to Ilisk and thence to Lake S. of Sydney, along the coast southwards for 40 m. to Shoalhaven. Industries: dairy produce, collieries. The I. Lake is a salt lagoon where fish are plentiful and

fowl abundant. Pop. 12,900. Illecillewaet, celebrated glacier in Brit. Columbia, lying near Glacier House, on the Canadian Pacific Railway, having its origin in the snows and ice of Sir Donald It is in a condition of recession.

Ille-et-Vilaine, maritime dept of N.W France, bordering Mt. St. Michel Bay and the Eug. Channel. It formed part of the the Eng. Channel. It formed part of the old prov. of Brittany, and is now bounded W. by the depts. of Côtes-du-Nord and Morbhan, S. by Loire-Inferieuc, E. and N.E. by Mayenne and Manche. The Rs. Ille and Vilaine flow from N. and E., uniting at Rennes, the cap. The surface is mostly flat, with forests and marshes in the N. The former forest of Broccliands in the W. S. now represented by the ande in the W. is now represented by the laces.

Industries: [in some legal systems a marriage would be illegal where the spouses had not first obtained the consent of their parents; while in France, again, the dowry system, lending as it does to the mariage de convenance, tends equally surely to a morgan-atic union. Some have supposed that I. is more rampant among the hot-blooded races of the S. of Europe and S. America, or in other warm climates. But there is little statistical warranty for the assump-tion, although, so far as mere figures are concerned, two observations are material. First, that in most of those countries whose legal systems are based upon the Civil Law (q.r.), subsequent marriage, or even a less formal act, will legitimate offspring otherwise illegitimate; and, secondly, statistics of any reliable kind are not forthcoming for the majority of Oriental

,	'ear		Total Births	Illegitimate	Percentage of Illegitimates
			F.	SGIAND AND WALK	4
1935 1936 1937 1944 1946	:	:	598,756 609,292 610,557 715,318 820,719	25,105 24,895 25,341 52,385 53,919	4·1 4·1 7·0 6·5
				SCOTLAND	
1938 1939 1940 1943 1947	:	:	88,627 86,899 86,389 94,682 113,117	5,449 5,192 5,084 7,173 6,311	6 · 1 5 · 9 5 · 8 7 · 5 5 · 3

far less extensive forest of Paimpont. The p Marsh of Dol 1s a fertile region once enbarley), tobacco, flax, and potatoes are succeeding census periods these rates among the chief crops. Honey, and fruit have averaged 1.1 and 7.3 respectively. bariey), tobacco, hax, and possions are succeeding census periods in so races among the chief crops. Honey, and fruit have averaged 1:4 and 7:3 respectively, are plentiful: cider is produced, the The ingures for recent years, in which amount being equal to nearly 20 per cent statistics are available, are shown above, of the total Fr production. The oysters in Christian nations there can be no of Cancale are exported. The chief doubt that the Christian religion acts

soquences entailed by it in regard to the right to succeed to property. Bastardy in England and Wales has, however, lost much of the stigma traditionally attached to it by reason of the Logitimacy Act, 1926, which legitimates the offspring of unmarried paranta under the offspring of unmarried parents under specified con-ditions (see further under LEGITIMACY, LEGITIMATION).

In the census period 1871-1901 the percentage of illegitimates in the U.K. was

of Cancale are exported. The chief minerals are granite (round Fougers), related and argentiferous galena at Bruz.

St. Servan and St. Malo are the chief ports. Area 2697 sq. m. Pop. 578,200.

Illegitimacy, status of a child born out of wedlock. The status is especially important in all legal systems from the consequences entailed by it in regard to the affiliation. of lexitimate and illexitimate offspring is open to doubt. Most Aryan nations acknowledged illegitimate children as part of their families, and gave them a right to share in the patrimony, though in the Rom. law of succession illegitamate children were in a less favourable position in unmaried parents under specified conditions (see Jurther under LEGITIMAOY. LAGITIMAOY. LAG

Christianity may well have done no more than throw the egis of religion over what had long been a social commonplace; but the stigma it attached to infidelity to the marriage vow, and its doctrine that monogamous marriage was the only form of marriage that could exculpate intercourse, may well have gone far to stereotype the unenviable position of the bastard. Although eccles, ideas of marriage and legitimacy were slow in permeating the ruder Celtic nations, they soon induced the A.-S. law-giver to deny to the bastard any claim of blood relationship with the Magth or family. Some have even attributed the curious custom

lilicium, small genus of Magnoliacem. flourishes in Asia and America. I. verum is the star-aniso, which occurs in China and contains an aromatic oil used in

flavouring.

Illimani Mountain, one of the loftiest
mts. of the Bolivian Andes, in the E.

Cordillera Range, S. America.
Illinium, supposed metal (atomic number 61) of the rare earth group. Its sub-

stance is still doubtful.

Illinois (Illini, men), group of N. Amer. Indian tribes of the Algonquin linguistic They lived formerly in I. and the family. adjacent parts of Wisconsin, lowa, and Missouri. The chief tribes were Cahokia, of Bor.-Eng. (q.v.) to the doubts that were Peona. Kaskaskia, Tamaroa, Ma hegamea, supposed to surround the birth of older and Mongwena. As allies of the Fr. they

Country	Year	Total Births	Illegitimate Births	Hate of Illegitimate Births per 1000 births
Australia .	1937	119.131	5.163	43
Belgium .	1946	148,207	5.712	38
Canada .	1946	325.805	13,595	41
Chile	1932	149,459	54,702	36Ĉ
Denmark .	1946	96.111	7,592	80
Eire	1946	67.547	2,161	32
England & Wales	1946	820,719	53.919	65
Finland .	1946	106,075	6,341	59
France	1932	722,246	56,327	77
Germany .	1936	1,312,053	102,031	77
Holland.	1946	284.019	6,958	24
Italy	1942	926.063	34,674	37
New Zealand	1946	41.871	1.825	43
N. Ireland	1938	25,742	1,150	44
Norway .	1944	62,241	4.546	73
	1947	113.117	6.311	55
Scotland .				
Sweden .	1946	131,782	11,853	89
Switzerland .	1946	90,537	3,008	33

The loss of social caste does not seem to have attached to the degradation of status incident to I until somewhat later. Some medieval heroes of aristocratic if spurious birth appear to have prided themselves on their title of bastard.' The Conqueror was known as Win, the Bastard, without any connotation of shame, but rather as a distinctive appellation. But apart from exceptional instances, social inferiority gradually followed as a necessary corollary to deprivation of proprietary rights. From an examination of the ann. reports of the Registrar of births and deaths, it will be found that in England the percentage of illegitimate births is later. Some medieval heroes of aristo-

deaths, it will be found that in England the percentage of illegitimate births is comparatively high in the E. cos. of Suffolk, Norfolk, and Lincolushire. It may be taken generally that the percentage is higher in agric, areas than in industrial cos.

The table above gives the illegitimate births per 1000 births for various countries

for the year shown against each.

See also LEGITIMATION. See Annual Reports of Registrar of Births and Deaths; International Health Book of League of Nations.

came into conflict with the Iroquois (1678).

came into conflict with the Iroquois (1678). They now number under 200, and are situated on a reservation at the Quapaw Agency, Indian Ter. See J. B. La Salle's account of his explorations (1670-82); G. Catlin, North American Indians 1842. Illinois, riv. of U.S.A., formed by the union of the Kankakee and Dos Plaines Rs. in Grundy co., about 10 m. from Morris, Illinois. Rising near Lake Michigan, it flows S. and S.W. through La Salle co, entering the Missigpipi about 20 m. above Alton and the Missouri's mouth. Length about 500 m., navigable for steamers 250 m. to La Salle, whence a ship canal connects it with the Chicago R. and the Chicago Drainage Canal, and Penra are the chief cities on its banks.

hence with the Great Lakes. Ottawa and Peoria are the chief cities on its banks. Illinois, one of the N. central states of the U.S.A. known as 'the Prairie State,' situated in the valley of the Mississippi and the basin of the Great Lakes. It is bounded N. by Wisconsin, E. by Lake Michigan and Indiana, S.E. by Kentucky, S.W. by Missouri, W. by Missouri and Iowa. The Missispipi R. is on the W. the Ohlo on the S., and the Wahash on the E. frontier. The surface is a vast plain,

with an average elevation of 500 ft., sloping slightly towards the S. and S.W. Cairo is the lowest point (267 ft. above the guif of Mexico), Silver Creek one of the highest (1145 ft.). There is a low, fortile plateau in the S. known as Egypt. The Great Prairie (200 m. long) is in the centre. The Illinois is the chief riv., and there are saline, subhur, and chalvheate springs in saline, sulphur, and chalybeate springs in the S. The Illinois and Michigan Canal, connecting Lake Michigan and the Great Lakes with the Mississippi was constructed between 1830 and 1850. There is a difference of about 11° F. in the temps. of N. and S. The soil is very fertile, but an N. and S. The soil is very fertile, but an underlying stratum of clay, which retains the rainfall, necessitates elaborate drainage systems. Trees have been extensively planted, and I. ranks next to Iowa as an agric. state. Wheat, corn, hay, and various other cereals are grown. Fruit, especially apples, pears, and peaches, is much cultivated, particularly in the hilly belt of the S. Here cotton is also grown successfully. There are good vineyards, the centre of the liquor industry being Peorla. Livestock are reared and fine dairy produce is obtained. Slaughtering dairy produce is obtained. Slaughtering and meat-packing is the most important industry, centred of Chicago. Fisheries are also carried on introly, pike, buss, salmon-trout, carp, sturgeon, and paddle-lish being plentiful in the rivs, and lakes. Bituminous coal is the chief mineral, the coal-field covering about 37,500 sq. m. In 1947 the coal output was 73,446,930 tons. Pig-Iron, petroloum, natural gas, sandstone, and limestone are also valuable. Building-stone is quarried chiefly in Monroe, Lawrence, and Decatur cos. Zinc, fluor par, Portland cement, gypsum, and marble are found. I. ranks third in mineral output in the U.S. The last figures on agriculture show that in 1946 figures on agriculture show that in 1946 the chief cereal crops were marke 514,368,000 bushels; wheat, 19,533,000 bushels; oats, 168,693,000 bushels; barley, ryc, and buck wheat are also grown. The output of soya beans at 75,036,000 bushels (1946) amounted to more than one-third of the country's entire output. Soap, candles, and pottery are among the chief manufs. I. ranks as the third repursaturing state in America. entire output. Soap, candles, and pottery are among the chief manufs. I. ranks as the third manufacturing state in America, giving precedence only to New York and Pennsylvania. Some of the most important the are Chicago 3,396,800; Springfield (State cap.). 75,500; Peoria, 105,000; Rockford, 81,600; E. St. Louis, 75,600; Oak Park Village, 66,000; Evanston, 65,300; Cicero, 61,700; Decatur, 59,300; Berwyn, 48,400; Aurora, 47,100; and Joliet, 42,300; other thas are Quincy, Galesburg, Jacksonville, Freeport, Lasalle, and Ottawa. There are 100 cos. Communication is excellent both by rull and water. There are well over 12 thousand m. of railroad track in use. The railway transport is the greatest in the U.S., and Chicago is the largest railway centre in the world. The transport by rail is so cheap that it has brought down the freightage cost on the Ohio and over 12 thousand m. of railroad track in the line of the railroad track in the use. The railroad track in the use. The railroad track in the U.S., and Chicago is the largest railroad to the use of the largest railroad to the world. The transport by rail is so cheap that it has brought the dississippi. The Sanganon and the Mississippi. The Sanganon and Morgan Railroad was the first opened (1839). The N.W. Univ. at Evanston was corresponds to that of the conscripts,

founded about 1851. The State Univ., founded in 1867, is situated at Urbana and Champaign; Chicago Univ. (q.v.) was founded in 1892. There are many other line educational and charitable institute of "Italian and charitable institute of "Italian and the Armour Institute of "Italian and the Byth. Medical tions in 1., including the armour measure of Technology and the Rush Medical College of Chicago, the Knox College at Galesburg, and Illinois Wesleyan Univ. at Bloomington. The area is 56,400 sq. m. (Including 453 sq. m. water). Pop. 453 sq. m. water). 7,897,200.

7,897,200.

History and constitution.—In 1673 Joliet explored I., and in 1675 Father Marquette founded a Jesuit mission among the Kaskaski Indians. La Salle (q.r.) give the state its present name (1679), from the Indian tribes settled there, and built Fort Crèvecceur. Tonty continued his explorations. Fr. traders settled in I. between 1683-90. In 1763 I passed to England on the cession of Canada. It became part of the N.-W. Amer. Ter. in 1876, and findiana Ter. in 1800. in 1818 it was admitted to the Union. The Mormon troubles culminated here (1810-44). The present constitution was adopted in 1870. There is a Senate of 51 members, and a House of Representatives of 153 members, elected Representatives of 153 members, elected for tour and two years respectively. Twenty-six representatives are sent to the Twenty-six representatives are sent to the Lower House of the Federal Congress. See I. F. Mather, The Making of Illinois, 1900, 1912; C. W. Alvord, Centennial History of Illinois, 1920; W. F. and S. H. Dodd, Government in Illinois, 1925; E. F. Dunne, Illinois the Heart of the Nation, 1933; D. C. Penttie, A Prairie Grove, 1938; Federal Writers Project, Illinois: a Descriptive and Historical Guide, 1947.

Billinois, University of, was started by the

Canae, 1947.
Illinois, University of, was started by the state of Illinois. Under the Federal Gov.'s Land Grant Act, the state secured big tracts in 1862 and in 1867 gave the univ. 2293 acs., of which two-thirds are devoted to agriculture. The univ. has a teaching state of over 1000 and about 14,000 students. students.

illiterates, Illiteracy. It is not easy to obtain reliable returns either in England or elsewhere of the average number of persons who are unable to read or write. Although the census returns suggest themselves as the natural mode of getting the information, there can be, even through this channel, no means of compelling persons to disclose their I., nor, unless they ought to sign the returns themselves and only do so by a mark, any direct evidence of such I. In countries where universal conscription is in vogue it is easy to get at the percentage of I. from the registration of recruits. In Germany, Sweden, and Switzerland over 99 per cent, are able to read and write; in Holland somewhat over 1 per cent are

while of the number of women married annually nearly one-half are f. From these registers it appears that the lowest these registers is appears one of the percentage of I. is to be not with an England and Wales, Scotland, Germany, and Australia, and the highest, excluding Italy, in Iroland and S. Africa. With the Italy, in Iroland and S Africa. With the general spread of education throughout the masses which took place in advanced countries during last century, there was naturally a very marked drop in the per-centage of I. in these countries. Russian centage of 1. In the countries Russian statistics show a creditable decline in 1. In the last forty old years from 75 per cent in 1895 to only 10 per cent in 1942 A still more striking improvement is found in furkey, under the impulse of Kemal Ataturk's educational reforms,

during the seventeenth, and lasted in isolated bodies till the end of the eighteenth. The Roserucian Illuminati are eenth. The Rosicrucian Illuminati are quite distinct; their tenets are mixed with alchemy and occulism (see Rosi CRUCIANS). Finally, in 1776 a secret masonic society with republican and free-thinking views was formed by Adam Weishaupt, prof of Canon Law at Ingolstadt, Bavaria, who had been educated by the Jesuits, but became a freethinker. It was anti-Jesuit, and was suppressed in

Illumination (or Illuminism) term used in connection with the 'Enlightenment period of philosophy. Scientific reason, or the appeal to reason as opposed to the rehance on external authority marked tho the drop being from over 90 per cent in metaphysical systems from Descattes to 1927 to 35 per cent in 1934. Spain and Leibnitz The evolution of existing Portugal are more backward than the beliefs and institutions was completely

Country			No of Illiterates	Percentage of population	
Egypt (1927) India (1931) (1941) Brazil (1920) Mexico (1930) Turkev (1934) Greece (1935) Portugal (1940) Spain (1940) Poland (195) Lalv (1935) U.S.S.R. (1942) Canada (1931)	•		\$\\$17\ 000\ 26\\$.000\.000\ 000\ 28\\$.700\ 000\ 28\\$.700\ 000\ 000\ 7\\$.000\.000\ 1\\$000\.000\ 6\\$.71\\$.000\ 6\\$.71\\$.000\ 6\\$.71\\$.000\ 6\\$.71\\$.000\ 6\\$.71\\$.000\ 6\\$.71\\$.000\ 6\\$.71\\$.000\ 3\\$7\\$.000\ 6\\$.71\\$.000\ 3\\$7\\$7\\$0\\$7\\$7\\$7\\$7\\$7\\$7\\$7\\$7\\$7\\$7\\$7\\$7\\$7\	8, 7 84 0 67 0 59 5 55 1 32 0 49 0 27 , 21 0 19 0	

Illiteracy is practically unknown in the U > 1 the late for the whole pop. white and coloured (1947) was only 2-7 per cent of those over fourteen years of age

gives the most recent percentages

flikirch-Grafenstaden, vil of the Fr

Strasburg Pop. 6400

Illorin, walled native to of Nigeria cap of an administrative prove, and former cap of an association of states of the Yoruba country, W. Equatorial Africa about 170 m. N. E. of Lagos. It hese on the Ass., a trib of the Niger Pop. about Pop about Asa, a

Illuminants (engineering) See Light's, LIGHTHOUSE -Illuminating SLARCHI GHI. ULLI A VIOLE ARTIFICIAL

Agents, Start Hight, Little Violif Light, Start Hight, Little Violif Bummat, enlightened ones, the name assumed at various times by religious sects and secret societies. The sp. 'illuminati' (atumnados) seem to have been in origin akin to the various mystic Gnostic hersies which flourished in the sales Middle Assa though their annears.

rest of Europe, a feet which has its in- lignored in I their value denied, savo in so fluence on I in the S Amer states. New fart they were consistent with abstract foundland, owing to its scattered pop, principles set up by the nationalists as has a high degree of I. The above table, the ultimate criticion of truth. With the principles set up by the nationalists as the ultimate criterion of truth. With the lationalists, the pure reison became opposed to all emotions and enthuriasing which fuled to satisfy its dogmatic tests, and the net result of rationalist inquiry was the truly batten substitution of a natural delsin for recented religion of all kinds. This struct and unimagnative philosophy was para loxically, as it must seem to us, known as the I nlightenment. but the success that the scepticism of Pas al and others might well have had in confounding the principle of pure a priori reason was checked for a time by the temarkable progress of science. wa the shifting of metaphysical inquiry from the exclusive ground of deism to the analysis of knowledge that eventually sounded the death knell of rationalism. Locke taught that knowledge was wholly empirical, and denied the existence of those innate ideas of reason upon which early Middle Ages, though their appearance in Spain is later. They were suppressed by the Inquisition during the six later Rouseau's emotional polemics teenth century; they also estab, them-is swimp back the pendulum in favour of the selves in Picardy and elsewhere in France feelings as against the intellect in the

roalms of speculative inquiry Before the portion of the knilghtenment had closed and long before Roussoau, spinoza had the ked the tendency of rationalism to remove (sod to the position of a mere fu off observer and entirely unrelated to the mundane, by its insistence is a religious and this al requirement on the essential unity of things. Voltaire introduced the results of the Ing. Lunghtenment into Prance, and the Ir Fullghtenment took the form of a thoroughgoir g materialism in which truth and religion were diametric ally opposed. Within this circle flame I the light of Rousseau who beginning a an Incyclopediste of the ker I nilghtenment ended by being bitterly hostile to the whole principle of the ration dists which m its arotheous of the logical reason and large and profit else and use of gold conception of man as a self-centred unit contents independent of the urbit as environment in which he found limit the convergence of the page. A frag environment in which he found limit the convergence of the urbit as environment in which he found limit the limit of the urbit as environment in which he found limit the limit of the urbit as environment in which he found limit the limit of the urbit as environment in which he found limit the urbit as environment in the urbit as e

is individualism and its corollary is individualism and its corollary the assumption that institutions could be cast off at will and a fresh start made it izuored the fact that all institutions have their roots in the depths of time in l though this retrements as west cannot the favour the toe the times of the leaders of the Le Revolution Roussean's detrine thowever uncon ionsly they may be su explible of but expression in term of inthionals and the value to human that they denied the value to human well in of all the science. Tater it was the for comparison legion by Lessing and treatments. Horder in i continu d in the idean in a Hegel kant ind others that swept the so called I nlightenment from the field of philosophy Rousseaus demand for a return to nature ignored the social life in a way inconsistent with practical experi-ence, and even with his own maturer views. The Ger philosophy also claimed the replication of the abstract freedom of man, but in the cude wour to find again the value of the inner life of the individual of real worth and besuty in some ways ommensurate with the obvious potentialities of life and feeling with the earlier Ger empiricists God ceases to be a cold intellectual abstraction and is it gaided as immunent in nature hum in affairs and all sputtual experience 11 smallness of the unbit of reason find smanness of the amount of resenting expression in kants transcendentalism which looks upon it as an instrument utterly useless to fathorn the relations of cod and the soul Perhaps kant scripted philosophy is the last word on the subject when it demos the claims of ration them to comprehend ie dity on the ground that thought and the material of sense are in dissolubly connected and that so seuse

practised in the Middle Ages, and especially applied to devotional works. The art appears to have been evolved from the clissical methods of decorating or illustrating the books of the second and third centuries with pictures either in outline of with gilt shading to enhance the light effects, and intended to represent scenes sisten of in the text, through the florid by antine are of adorning MSS of the Gospels with brilliantly painted ornamental designs, gilt or silver lettering, and finite executed miniatures enhanced by highly gilt bukgrounds, to the ornamentation of the transe Lombards of the called a grubing as good the cheroster.

called (arolingian school the character



A DITRODUCTION OF A LACT FROM AN HILMINALID MANL (RIPI

n the Ambrosian I il uv at Milan, is said the the earliest extint example of an ill immated MS its bullety of decora in its in striking entrast with the Inflant miniatures (a technical term from I it minio, to colour with red had, mean it i picture in in illuminated MS and it i small portiut) of such MSS as

t i 'small portiut') of such MSS as t homilies of this ostom and various incoments of the 'use blon canons to be u in the But Mu cum. The faults in the By antine art it car to be that, while th inherited Orient it splendour of colour ing in gold sud yer milion gave character to the general scheme of docoration the dissolubly connected and that so sense experience can possibly be an ultimate experience can possibly be an ultimate the Byantine art of ear to be that, while the Byantine art of ear to be that, while the Byantine art of embeddishing MS-4 either by pictorial ornamentation of with decorated letters and designs in gold and colours was much of the figures of the saints or other per and designs in gold and colours was much unprepossessing. The reaction set in with the development of the art in Italy in the minth and tenth centuries, and later in the ninth and tenth centuries, and later in the Frankish empire. The Carolinglan or Frankish art owed its attractiveness largely to the independent ('eltic element originating in Ireland. The Irish art dispensed almost entirely with the use of gold, and relied for its effect on its designs and borders of intertwined ribbons, tangled knots, and intricate patterns and private and begonders an ingle the whole spirals, and legendary animals, the whole being executed with marvellous precision and minuteness. The celebrated Lindis-farne Gospels in the Cotton Collection in the Brit. Museum form one of the finest examples of the Celtic style, though these were really productions of Scottish monastic settlements. The colouring of the Celtic style is less bizarre than the Byzantine, but the drawing of figures and objects is orude probably because, being native-born, it proceeded independently of all classical models. The Franco-Lombard art combined the best elements of the art compined the nest elements of the Celtic and Byzantine; a return was here made to the abundant use of gold. The pure ornament outweight the illustrations or miniatures, which latter, as before, generally relate to scenes or characters from the Gospels, and are executed in free-band to be left. rrom the Gospeis, and are executed in free-hand in the later Rom. or so-called 'de-based classical' style. Examples of Carolingian art are Lothair's Gospels, Charles the Bald's bible, and an evan-geliarium among the Brit. Muscum Harleian MSS. A radical change came over the art of illumination at the end of the twelfth century and the conventional the twelfth century, and the conventional style then elaborated subsisted for something like 300 years' Almost the chief feature of bibles of this period is the border, which generally takes the form of a frame of fanciful foliage or other device. Greater prominence is given to the characters or MS. itself during this period, and in consequence the double-column pages are occupied mainly with the closely written characters, the 'miniatures' written characters, the 'miniatures' having become nothing more than large initials containing in actual miniature a pictorial representation of some act or scene relating to the corresponding text. Numerous examples may be found in the small bibles of the period. By the four-teenth century greater skill had been attained, not only in the more agreeable delineation of the human form, but in the representation of ornamental foliage. Scenery begins to appear, and the stiff and even grotesque contortions of the Byzantine figures yield to a free and dramatic arrangement or grouping, while the tawdry gold background disappears altogether. Skill in realistic drawing, however, tended to the destruction of illumination as an art in itself, and from the perfection attained in the Middle Ages the decorative execution declined to a style characterised by miniatures treated with admirable skill, hordered with gold, and interspersed

set in Brit. Museum. With the Renaissance in Italy and the return to classic models the art of illumination attained its zenith in minute delicacy of colouring and perfectiveness clement of drawing, and, furthermore, an official recognition by both the republican princes and the various popes and doges. Ultimately, however, it was the invention of printing that destroyed the art and reduced it to the mere pastime of painting miniatures in spaces left for the purpose, rather by way of subsequent adornment

than as an art in itself.

The Brit Museum has no true classical illumination, the few surviving specimens of which must, according to Dr. Arundell Esdaile, be sought in Italy; while the remains of the Cotton Genesis, fifth or sixth century, belong to the Byzantine School. But 'in work of all the later schools, down to the decay of the art upon schools, down to the accay of the art upon the rise of printing, the museum is abundantly rich, not only by grace of the foundation collections, but by gifts, bequests etc. Fine examples of the Eng. school of I. M. recently acquired include: school of I. M. recently acquired include: The Appealupse of the Abbey of Abingdon (thirteenth century), acquired in 1931; The Psalter of the Abbey of Eresham (thirteenth century) purchased and presented in 1936 by the National Art Collections Fund; The M. R. James Psalter (fourteenth century) written for use in 19nrham diocese, and presented in 1937; The Luttrell Psalter (g.r.) acquired in 1929: The Bedford Hours and Psalter. in 1929: The Entirett requirer (q.r.) bequired in 1929: The Bedford Hours and Psaller, a book by an Eng. artist and not to be confounded with the more famous Hours (Add. MS. 1830) also executed for John, Duke of Bedford, and of Fr. workmanship. It is, says Dr. Esdaile, one of the finest examples of the school which arose and flourished for a time after the Black Death and was the end of Eng. illumination and it is unique in containing over 300 exqueste miniature heads, which may be portraits.' The Museum secured it, when auctioned, for £33,000 (see A. Esdalle, The British Museum Library, 1946).

British Museum Library, 1946).
Consult. F. Delamotte, Primer of the
Art of Illumination, 1860; W. Tymms
and M. Wvatt, Art of Illuminating, 1860;
H. Shaw, Handbook of the Art of Illumination as practised in the Middle Ages, 1886;
J. Bradley, Manual of Illumination, 1887;
J. A. Hebert, Illuminated Manuscripts,
1911; J. L. Choulant, History and Bibliography of Anatomic Illustrations, 1920;
S. Farnworth, Illumination and its development in the Present Day, 1922; F. Jacobi, ment in the Present Day, 1922; F. Jacobi, Deutsche Buchmalerei in threm Stiltstis-chen Entwickelungsphasen, 1923; E. Millar, English Illuminated Manuscripts, 1998; A. Multin Gutchens of Ulymi-1928; A. Molthor, Catalogue of Illuminated Manuscripts, 1937.

Illuminations, see PYROTECHNICS. Illuminism, see ILLUMINATIO:

illusion, term loosely applied both to delusions and hallucinations, or, in other words, to perversions of the senses and perverted deas. Psychologista differ as with devorly painted flowers and insects, to the more appropriate application of while the text assumes a place of merely secondary importance. One of the best camples of fifteenth century illumination is the Bedford Book of Hours, now in the

the sensations of sight and causing the subject to see what are commonly termed visions or appartions, and defining I as the false interpretation of a sensation actually perceived. Dr. Ferrier, while including both under the generic name of ls., differentiates between an I. of the senses and a delusion of the mind. defines Is, generally as sensations without a corresponding external object, giving the names spectralillusion, phantom, or phantasm where the eye is or seems to be the seat of sensation, and the term rivid idea or conception when the I, is due to an act of ideation. The whole distinction is sharply drawn by regarding an I. as a mockery, false show, or deceptive appearance, and an hallucination, delusion, or 'illusive transformation' (Ferrier) as a chimerical thought. Popularly, any transformed appearance of a real object, any appearance without a corresponding physical or external object, and any distorted, exaggerated, or nusconceived notion or idea constitute is. The distinction is important according to Dr. Tuke in regard to insanity, because, while the sane may easily transform a real object into something to Lad it is, the perception of an object externally projected without the slightest corresponding reality indicates some serious disturbance of the nervous system. Both Is, and delusions, however, are consistent with sanity. A scientist closely concentrating his mind and senses on some experimental work may well have visual and auditory Is, conjured up by a subtle interaction of some external object upon strained or expectant senses, without thereby being mentally diseased. Is, may occur quite early in life, and are more common in males than females. According to Dr. Ferrier, some who have experienced Is. indicates some serious disturbance of the Ferrier, some who have experienced Is. have been remarkable for active memories, great ability, and extreme sensitiveness, while of hers were by no means so endowed. and, again, some are in perfect health, while others are suffering at the time from either triffing indispositions curable by dicting or from serious inflammatory and febrile diseases. In the criminal law (q.r.), the term delusional insanity appears to embrace Is. and hallucinations into embrace 19, and managinations in differently, provided the reason is involved. See D. Tuko, Dictionary of Psychological Medicine, 1922; T. and J. Beck, Medical Jurisprudence, 1838; W. Guy and D. Ferrier, Principles of Forensic Medicine,

1881.
4 Illustrated London News, founded by nowsneed of Nottinga small printer and newsagent of Nottingham named Herbert Ingram, and generally said to be the first illustrated news-paper over pub. The first number was brought out in May 1812, and among the earlier of its artists were John Gilbert. John Leech, and Birket Foster. Its first notable editor was Charles Mackay and among its most distinguished contributors have been Mark Lomon, George Augustus Sala (Sement Scott, and Andrew Lang.

of the brain affecting the remembrance of walls of sepulchral chambers and the pil. lars of temples with the exploits of their kings, and the Assyrians told the story of their great wars and sieges on the friezes of their monuments; but in the modern sense I, may be defined as the pictorial presentation of an idea expounded in an accompanying text. It is thus an accessory to the printed word, although in the hands of a skilful artist the two may often be aesthetically indivisible. This article attempts to deal only with book I. (For the medieval illuminated MSS. see ILLUMINATION OF MSS).

The earliest L's were block prints, such as the St. Christopher (1423), which were usually of religious subjects and which made their first appearance in Europe at about the same time as the invention of printing although probably independently of it. These blocks were woodcuts, having the design cut with a knife in relief on the plank surface of a soft wood. Any accompanying text was also cut in the same block. At a later date the prints were pasted together to form books, a few of which are still extant, notably the Biblia Pauperum (c. 1465). One of the earliest books printed from movable type to contain woodcut I.'s was Aldus's Hymurotomachia Polifili (1499) (q.r.), and not long afterwards Botticelli executed his admirable designs for Dante's Dirina



BANS HOLBERY THE YOUNGER 'Death of the Duchess' from The Dance of I)e t.h. 1538.

Commedia. Broadly speaking, I. experienced the same up- and downs as painting, and whenever an important school of the greater art was then, too, the lesser art flourished. Thus the It's Pollaguolo and Muntegna not only painted but executed a number of excellent line engravings. In Illustration is as old as art itself. Two dermany, Durer and the younger Holbein or three thou-and years before Christ, and exploited the method, and the latter's earlier still, the Egyptians adorned the book Dance of Death is his most notable end of the fifteenth century

Copper was first used for engraving about 1477 but the method was not intro duced into Angland until about 1540 when it gradually superseded woodcuts Unlike the latter it is an integlio process The design is cut with a built, or graver. on to a polished copper plate which is then inked over and the suifice wiped clean, leaving the ink in the received meisions leaving the ink in the icce sed incisions ander pressure the ink is trustered from the plate to paper. I included may be reproduced by this method and it was widely practised by timous artists for book. I up to the nimeteenth century, notably by the school of Rembrandt in Holland, and of Wattean and Frizon and in France, and later by Hogarth and Reynolds. The aquatint, the on intaglio process but capable of suggesting tonal variation, was used by Rowlandson to great effect in his Inglesh Dance of Death (1816) and Iours of Doctor Syntar (1812). The drawing was done by the artist him self and the prints from it were then haudcoloured by professional colourists



WHILIAM BLAKE $f \int ib$ Lith tree i Idustrations of le l

Liching another important intaglio process, allows greater freedom than engraving the surface of a metal plate is made acid resistant by covering with wax which is then worked over with a needle to open up the surface of the copper open up the surface of the copper training with Houghton, Finwell, next etched it as all and may be controlled. Frederick Wilker, and even Whistler, who to produce varying depths of line which represent the 'bixties' period. The most will hold more or less ink. William Blake satisfying books were those flustrated by adapted the process to his own onds for a single actist, such as Millais s /he his Illustrations to the Book of Job (1825). Parables of Our Lord (1864), Hughes's

work in this field. In France, the wood-outs were made for Books of Hours at the end of the fifteenth century.

by etching in reverse so that the design was printed in relief, as in a woodcut cullshank used it as the nicdium for a large part of his enormous output, and in his I 's to Grimm and Dickens one sees the relationship of author and artist truly wedded. For the reproduction of oil paintings mezoriant and aquatint were widely used in the hands of professional engravers, both processes being capable, unlike copper engravings and etclings, of rendering subtle gradations of tone

Homes bewick first evolved the tech nime of wood engriving, as opposed to wood cutting, by working on the end grain of hind woods such as box and achieved an a tonishing range of tone and sense of His love of country life and his depth genius for depicting character exemplify themselves in his smaller vignettes though his two works generally acknow vignettes things his two works generally acknow ledged to be his greatest at the General History of Quadrupers (1790) and History of bit has birds (1797). He founded the set holl of kny wood engrating which has communed with few interruptions down to the present day blike one venture in the field of wood engraving was a num-ber of vignettes for an ed of Vigil's Pa t rals (1521)

Sen feld is invention of lithography (i.e.) in ide its first appearance in Figland at the 1 ginning of the mineteenth century, and gradially became establish as a method o boos I Its virtues at that time lay in the county to interpret tathfully the varying characteristics of pen pencil or brush and in the fact that the arrists or gird work vas reproduced without the intervention of the eigenver It was used widely for ill structed works of topography and to good effect in the original ed of lear s look of Vois use (1846) but it wis in Franco that it was insurpassed notable in the west set towards. notably in the work of Danmer and Crtvaint

The art of engraving de lined in the middle of the nine centil century to be jet yed by the Pre Raj hachtes who were the leiding spirits of a new school of farmic engraving. They drew on the wedstell sometimes etting the engriver an ilmost impossible task as is evidenced by the complaints of the Dalziel brothers that Reservi was auto unable to maker the limit it one of the medium. For they were re ponsible for that close and ideal union between artist and energy; which in times past had columbly accounted for the execult needs the work done. Their I firmed in such contemporary magazines us to al Hords Cornhill, and the Lecture II in and a study of these will at once its al their reverging for bygone eras their emulation of ald masters, their loving attertion to detail, their naturalism, and their point for symbolic luterpiets tion. The pictorial conviction of Millars designs for Trollopo's Francey lais a designs for Trollope a
Parsonage links the Pre-R brotherhood wath Pre-Raphaelite with Houghton,

illustrations for Christina Rossetti's Sing-Song (1872) and of course Tenniel's Alice (1869) The broad characteristics of this period were idville delineation of the blums of country and home life and de light in open or chects, freedom and movement—a delight expressed partly by large clear spaces, and partly by loose but nervously sensitive outlines

One of the later schools of illustrators was a group who sketched for the Dial (1589-1997). Their magazine was au artistic protest igainst the indiscriminate issue of books whose cheapines was the single apology for their circless binding, common paper and inferior I, by means of photographic processes which were then organing to establish themselves. A much more effectual protest was made by Win Morris, when, in 1891, he set up his kelmscott Press Profit was a secondary emisdication, and he printed a series of hoice eds, which are an ornament to the helves of the most fastidious of book col I ike his paintings and his tapes tios, his illustrated volst tre one and all immated with a true do or itive sense and the sturdy spirit of ioniance and no dieval-ism. His influence was a rise to the 'Birm inclum schoo () without chargers tion may be sail even to day, to insure r sociated Ruskin, who can make the process standard of the strengthing artest of the day. Its Voltar Pantes and Stones (1) allows the process standard of temper for which the services of the of temperatures. In the field of control of the office the nine cutt commy their were many ever mine the first but in their conception of the present certain the stem rapid and, in their conception of the land conce att, in the 1 and choice of subject they i were their avidualistic to make thy effort | dit in of photographs where a softness at grouping cress action expedit to the even possible. The conventional grace of du Municrette elever 'sumpireds' of a Phil Mars entons in Punch, the pen and ink drawing it I at Albey and Harry Lumis were all popular and the thoroughters. their imit itor In coloni Wilter Craic copies of delightful liner and the drafthe decontive acsigns. But Greenway's studies of claiming culding in mobile of and long skut and Randolph Caldecott's gas hunting seenes were, and are still tamiliar

The advent of photography in the last decades of the imeteenth century as a medium for reproducing drawings was to revolutionse the whole field of I -m'ag ho, plane taplue and telef Among the first to exploit its possibilities was Aubicy Beardsley whose brilliant black and white drawings were reproduced by means or name by 'vite's used for all it is trength. It is treated as an interest late which is then the dearms the state of the treated metal to that it can a here much are plate which is then the dearms the state of the original of the drawing which are acid to the effects on a wider variety of inest of the drawing which are acid to the effects on a wider variety of point surface, and printed in the same way as a wood cheraking. In in age of increasing committed about this process had the advantage of speed, and from the artist's point of view it had the mental state of the considered the activity bugbear of half one other photons who is a point of view it had the mental state of the considered the activity bugbear of half one other photons who is a point of view it had the mental state of the considered the activity bugbear of half one other photons who is a point of view it had the mental state of the considered the activity bugbear of half one other photons who is a considered the activity bugbear of half one other photons who is a considered the activity bugbear of half one other photons who is a considered the activity bugbear of half one other photons when a considered the activity bugbear of half one other photons when a considered the activity bugbear of half one other photons when a considered the activity bugbear of half one other photons when a considered the activity bugbear of half one other photons when a considered the activity bugbear of half one other photons are considered the activity bugbear of half one other photons are considered the activity bugbear of half one other photons are considered the activity bugbear of half one other photons are considered the activity bugbear of half one other photons are considered the activity used for a considered the activ

reproducing his original drawing in any desired size, and the original itself was not distroyed in the process. This was soon followed by the arrival of the half-tone process which was a method of reproducing continuous tone subjects such as photographs. In principle it is the same as the line block except that the negative which is to be printed on the inital plate is fit-t broken up, by exposure through a cress hard screen into a series of dots of varying sizes creating an illusion of tone (clon d originals are readily reproduced by the half tone traces by moone of by the half tone process by means of colour filters which break down the tones of the original into their three primary climents. Separate half fore plates are made of each and superimposed in print ing to recreate the colours of the original in that true values. The process is capable of reproducing a wide range of subject both in monochrome and colour and is us d for nowspaper I and very widely to reals. It can give very fair repre-sentations of pencil and erayon drawings by the use of peeral etching techniques it was the artist great scope in that the duction of his original is mechanical, leav ne him with no medium to be cone or d. Against this must be set the feet that the last tone screen ultimately gives COd

into ho processe photograving (q i) opine in book I mainly for the repro 1.11 the desired in life a producing themselves. Its chief of ductody, howevers in the heals, where by mean me on poper fed from nt dli f rot irv ıll, bi b I to attainable a long and with

t thography, a the reluce process in its to day in the all of the caucra, in used in book the subctogravine 11 While if can interport wide range of the technique of cunof attain it cuspies and charty of autolithous when the it is when when the it is when when the control of the con crite the state. To main reasons for the married and renewes as intert here and then of the screen to pro-lug variations of that strength of the wildy used for of any ork and in this

be mentioned briefly at this stage. Collo- p type, like lithography, is a planographic method of printing (i.e. from a flat surface), but unlike any other method it dispenses with a screen for reproducing tones. It can reproduce fine 1.'s with great fidelity both in black-and-white and in colour, but owing to the instability of the printing surface it deteriorates rapidly and is therefore confined to printing small eds. The process excels in the reproduction of works of art, where, with as many as seven or eight printings, a result is obtained which can be achieved by no other process.

In view of the acknowledged limitations of photographic methods it is not surprising to find an antithetic tendency at work among present day artists over the whole field of book I. This manifests itself in a return to carlier craftsmen's methods, notably in the flourishing schools of wood engraving; and much line work is also being done by autolithography. Earlier in the century the work of various private presses did much to revive and encourage good craftsmenship, and in this connection should be mentioned the work



of Eric Gill and Robert Gibbin's at the Golden Cockerel Press. The ed. of The Canterbury Tales from this press is a fine example of the work of Gill whose chasical spirit combined with great skill as a de-signer of lettering and typefaces in many instances resulted in a harmonious blending of I. with the printed text. Chaucer, the inspiration of sev. modern illustrators, has also been pub. in a fine cd. with colour plates by Russel Flint, and in America with wood engravings by Rockwell Kent. Another Amer. much of whose output has lambas.

appeared in Great Britain is E. McKnight Kauffer who has done much imaginative work in the field of advertising as well as in book I. Of the latter his L's for the Nonesuch Press Don Quicote should be mentioned. This press has contrived to produce books matching in quality those from the private presses, but, by making the best use of modern mechanical methods, to publish them at comparatively cheaper prices. Other artists who have done fine work in wood engraving are Paul Nash, Douglas Bliss, Clare Leighton, John Farleigh, and many more. Lincleum, too, has proved an excellent medium for either black-and-white or colour 1, and two artists who have worked successfully m this medium are Claudo Flight and Wm. Kermode. Autolithography has seen a welcome revival, and in this connection should be mentioned the work of Barnett Freedman (especially a series of his coloured L's for Tolstoy's War und Peace), John Nash, and John Piper.

The constant development of new processes of book I. (as for example the recent application of plastics to lithography) tends towards a new synthesis of the craftsman and the machine, with the nim of achieving the maximum fidelity of reproduction while allowing the greatest reproduction white anowing the growest scope to artistic technique. See G. Cruik-shank, Water colours, 1903; H. E. kurst, Modern Book Illustration, 1931, The Studio, Children's Books of Yesterday, 1933; J. Thorpe, English Illustration:

the ninclies, 1935.

See also Block-Books; Caricarube; ENGRAVING: ILLUMINATION OF MANU-

SCRIPTS.

Illyria, name of a vaguely defined mountainous dist. on the E. coast of the Adratic, running from Durazzo in Albama up to Finne in Istria. Inland the line up to Finne in Istra. Imana the me was still more indefinite, but it may be regarded as including the N. parts of Albana. Montenegro, part of Serbia W. of the Morava, Dalmatia, Boshia-Herzgovina, and part of Croatia-Slavonia. The Rom. prov. of Illyricum vaned in area from time to time, and no struct governableal limits can be assigned strict geographical limits can be assigned to d. In early (ik. hist, we only know of the barbarian 'Hlyrians,' whose legendary ancestor was descended from Cadmus and Harmonia; archeological research shows that the primitive peoples spoke a Venetic didect, also Meroapian, akin to modern Albanian. Gk. colonies were settled all along the coast during the whole of the sixth century B.C., and coins and inscriptions have been found at Durazzo (Epidamnus), Split (Salona), Dubrovník (Epi-daurum), etc. The inter-tribal warfare seems to have been checked by Celtic pressure in the fourth century, and a con-tederation was formed which pressed on Macedonia. Under a chief Bardylis, and his son, Clifus, Amyntas was defeated, and later Perdiceas. Philip of Macedon thually crushed them. The tribes turned to piracy and harried both Gk. and Rom. trade. Their queen Teuta insolently refused terms, and murdered the Rom. ambas. In 180 B.c. an independent republic of Dalmatia was estab., and the kingdom of the Illyrian Genthius was annexed to Rome, 168; Dalmatia con-tinuing aggressive and powerful till A.D. 9, when the whole country became a Rom, proy. It furnished some of the best soldiers for the Rom, armles, and many of the emperors were Illyrian by birth. In A.D. 379 E. Illyricum went to the Byzantine empire. The ethnological character of the dist, was modified by the Humish invasion in the fifth century, and in the seventh century by the Slavonic immigra-tion of Croats and Serbs, though the coast tns. still remained It. in civilisation. The primitivo races remain in Albania alone. in 1809 the Hlyrian prove, were formed and ceded to Italy: they were conquered by Napoleon and ceded to Austria in 1813, and till 1849 formed a kingdom of the Austro-Hungarian empire. See also Y CGOSLAVIA.

Illyricus, see Flacius, Matrilias. Ilmen, lake of Russia in the region of Novgorod, R.S.F.S.R., 30 m. in length from E. to W. by 21 m. in greatest brendth. Its chief trib. is the Lovat. It discharges its surplus waters by the Volk-

hov northward into Lake Ladoga.

Ilmenau, th. of Thuringia, Germany, it is situated at the N. foot of the Thuringian Forest on the R. Ilm, 30 m. by rail S. of Erfurt. The tn. is a favourite the control of the control watering place, and was visited by Goethe, who wrote his *Iphigenia* here. Pop. 16,100. Ilmenite, titaniferous iron ore found in

many localities, more particularly Krageroo in Norway, where good crystals occur, in the U.S.A., and in Canada. It has been found as sand on the banks of the Mersey, and at Helston in Cornwall. The name is derived from the Ilmen Mts. (Urals), where it is found in magnificent crystals. Its formula is generally given as FeTiO, but in many cases the mineral contains magnesium, so that it may be written (Fe,Mg)TiO₃. It is not isomorphous with heenatite, but belongs to the parallel-faced hemiliedral class of the rhombohedral system.

Ilminster, mrkt. tn. of Somerset, Eng., 104 m. from Tounton, Alt. 140 ft. Pop. 2300

Il Obeid, see EL OBERD.

Hobu, native tn. of Nigeria, in the Yoruba country. Pop. 60,000.

orana country. 1701, 50,000.

Rocos Norte, mountainous coast prov. of N.W. Luzon, Philippine Is. Its peaks are in part volcanic. The valleys are watered by the Pagstan and other streams. Cap. Laceg. Pop. 180,000.

Rocos Sur, coast prov. of N.W. Luzon, Thillippine Is. Aron. 614 80 20.

Philippino is. Area 644 sq. m. It is rather flat and very fortile. Medicinal plants grow in the mts. Pop. 190,000. Iloilo, Sp. settlement, and the chief port

after Manila in the Philippine Is. It is the cap. of Hollo prov., Panay, in Hollo Strait. opposite Guimarus Is. It is an Strait, opposite Guimaras Is.

open port and exports sugar, rice, tobacco, and coffee. Pop. about 70,000.

Ilorin, tn. of the Yoruba tribe, S. Nigeria, some 250 m. from Lagos. Conquered by the N. emirs of Nigeria. It is a busy trading centre in paim-oil products, cocos, hides, etc. Pop. 42,000.

llsenburg, tn. and watering-place of Saxony, Germany, 16 m. W. of Halber-stadt. Pop. 5300. Ilus, son of Tros and Callirrhos, and

great-grandson of Dardanus. He was supposed to be the tounder of Hion, which he called Troy after his father. His son was Luomedon, and he was the grandfather of Priam.

liversgehoten, tn. of Saxony, Germany, situated in the circle of, and 2m. N. from

Erfurt. Pop. 12,000.

Imac, see under MALACHY, SAINT. Image-worship (Gk. είδωλολατρια), the use for private or public devotions of graven or painted representations of sacred persons or things, to which honour and reverence are given instead of to the invisible Godhead. The term is sometimes taken for the use, as in the Rom. Church, of pictures or images which are only designed to convey to the worshippers an idea of that which they worship, but it is more often limited to the sense of meaning the actual worship of the image itself, not of that which it represents. I, was a comparatively late development of primitive religion, and grew out of the earlier fetish worship, in which a stone or a wooden post was worshipped with the idea that the spirit of a god had entered there to receive sacrifice (cf. Asherah, Ex. xxxiv. 13). The making of images in some definite form marks a great advance in religious thought and shows the birth of conceptions of the Divine character and attributes. Varro aillrins that for more than 170 years from the foundation of Rome there was in the city no image of a god either in human or animal form, and god effect in human or animal form, and historians have proved that neither in Greece, Persia, nor Egypt, were there temples or idols in the earliest times. The Decalegue begins with the command to recorner the one true God and to recog-sic another delties, but the largest nise no other deities, but the lamentations and the demnnciations of the prophets show how thoroughly the cults of other deities were rooted in the hearts of the Israelites, how hard it was to root out the idol-worship traditions of their Semite ancestors, and how easy it was for them to anopt the gods and the graven images of their Canaanitish neighbours (1 Kings xi. 8; Jer. xii. 18). The Jewish worship of idols was checked but not cradicated during the Exile, and various passages in the labored demonstrate the tendency of the Jews to adopt the gods of the Gks. and Roms., and more especially those of their Oriental neighbours. To prevent such relapses all association of Jews and Gentiles was rendered difficult, and by degrees the former were weaned from idolatrous worship. Neither in the N.T. nor in any genuine secular hist, of the first century of Christianity can any trace be found of the use of images in the worship of the Christians, and though images of Christ, His Mother, and the Apostles are to be found in the Rom, catacombs, it was not until after the estab. of Christianity under Constantine that the practice be-came common. For the use of images in the Rom. Church, see under ROMAN CATHOLIC CHURCH. See also the series of

kneyelopaedra of Religion and I thies,

1914, vol vil.
Imagist school of poetry had for its philosopher the Englishmin, I. F. Hulme, philosophor the English min. I F. Huling, for its prophet the cosmopolite Amer, Ezia Pound, and for its expounder the Amer poeters, Ann Lowell (1). Others who be longed this shool mithe period 1912-1917, were the Amers H. D. (Hida Doolitt) Harnet Mouroe and John G. Fitcher, and the Englishmen Richard Aldington (vid later 1. S. Hotformelly a. L. (dign.) and Harter Richard Aldington (vid later I > Phot formerly a I > citizen) and Harker Read. Lake all new schools of coctry, it was a revite in this case it was a revolt against excessive tomanticism against loose or sentimental virbid painting, and lagainst the sing song school it was Hulme who started the discussion of the mage in poetry, and his friend, Pound who first gave it practical application All these poets pursued the ideal of order liness, conciseness, and strict objectivity, and they found inspirition in cik i it Chinese, and Jup poetry Indeed, it was largely due to the influence of the I that rogue some vens a Mil the is seconding to their temperament sought to act upon fulmes theory that the chief description, and that it was essential to ommonplace things Most of the experimenters used free ver e 500 Am lowell (ed.), Some Imagist Poets 1912, G. Hughes, Imagism and the Irragists 1931

Imam, title of the officer will add the devotions in Yish mosques and who, in Turkey, conducts No am members and funeral sorvices, 15 well as performs the ceremonies connected with circumcision The office was assumed and the ticle be ne by Mahomet, whence it sometimes denotes the head of the faith and it was so applied to the Sultan of Luck 1 and to day is applied to Yahla, king of I of the Yenen Some Mohammed in 1 of the Yenen future advent of an I the hidden I. who shall be greater than the I rophet

himself

Imam Yehia, se Luil

imandra, lake in the W I angel I egion of the R > R > R , > m > of Kola Length > 0 m , greatest be alth 10 m Area 30 of m It drains into the Winto

Imatra Fails, in I inland on the Vuoxen a short distance from its exit from Sama

Lake 39 m v of Vupuri Imaus and name for t art of the

Imaus and name for a little the Himals, a Mrs. Imbabura, dept of lendor, with Pichincha to the N. Famer side to the W. and Cacia to the N. Lang in the Andes mit, it contains the 1,000 ft volcane, imbabira. Stock rising is the prin. occupation (ap Ibura Arca, 2414 sq. m. Pop. 146,200 imbediity, see Christish Idiocy; Mrnial Dificiency Atta

articles 'Images and Idols ' in 1 Hastings I thrace to foun the administrative dist of the sanjak of Lemnos It is the seat of a Cak be hoped. It is extremely fertile During the Dardanelles campaign in the First World War Gen Sie lan Hamilton, commander of the Brit, contingent, had his heidquitters at I It was here also that the 11th Div was concentrated be fore its attack at A 1210. When the with drived of the birt forces to k place they hist went to I and one of the other is cear of the penin ula I was held by th (ds. until 1)2 when it was returned to luckey under the testy of Lausinne List the kastion | Lop 9000

Immisulate Conception (Lat in, not, ma ware to stim) dogma of the Rom (affiche Church that the Vigan dary was Immisulate Conception (Lat a nerved without original single that is, he was entirely exempt from the stain of sin tion the first moment of his existence The dectrine was the subject of bitter and stren ous controversy in the Church for nearly 100 years In 1210 St Pernud protested a anst the introduction of the new teast into the Calcular of the Church if Lyons without the consent of Rom In doing the argues is unit the do trine but mi conceives the some In 100 Duns scotus munitumed the complete Dins Scotus maintained the complete exemption from succeeding the language of systems IV in 1185 commended by a constitution that the distinct should observe themes and toler meet by its one another The univ of I me at the sum time refused degrees to those who did not defend the doctrine like (ouncil of Iront (1 i 65) left the q estion unsettled and the dispute wixed hotter until the end of the sixteentia century, whin the Pope forbade except under cert in onditions, all put he discussion of the sulpt and probabiled disputants from Landing cult other as heretes Succesive popes were to prested to make a deal in but beyond adding importance to the feist of the conception in a permit ting the word immaculate to be used in connects a therewith, the matter was not mally dealed until the dozma was proclaimed by solemn decree by Pope Plus claimed by sole in decree by Pope Plus IX on he = 1854 Fluc (k. Church celebrate the least on Dec.), under the title of the concepts in of St. Anne, the Vigin's i other. Hustings, Friende par lea of Leligion and I three, 1924, vol. vii. J. Redmann, History of Philosophy, truss by W. Hough, 1890 Lieubeth Snings, The Catholic Doctrine of the Immiculate Conception, 1933. F. Bird, Leplanation of the Immiculate Conception, 195 ception, 19;

Immanence, or Immanent (Lat. 1m, in and manere, to remain), philosophic term Imbedility, see CRETICISM IDDOCY;
MENIAL DESCRIPTION ATT
Imbros, or Imros, is in the NE, of the
Egean Sea, a of Samothrace. It belongs to Turkey and is joined with Samo

Turkey and is joined with Samo

It is in opposition to the doctrine of transcendentalism, which Figland, settling at Spitalfields and teaches that the Deity has an existence Bethnal Green, carrying on silk wearing apart from the universe, which is in effect only a subsiding expression of His activity I mally will H is the term used by Rom Catholics to denote the modern ist theory that religion has its source in man's intimate sense of the divine or need for the minite (lius X's kneyclical Panendi)

Immanuel, or Emmanuel, H(b) proper name me ming '(a) d (is) with us'. It first occurs in the Bible in the prophecy of Isafah (vii 11) to this king of Judah in reference to a child that was to be born as

time his in our mendship with the connects von Ahle Cidt, I list von I utzow begin lie wis i judge if Mirdebur (1823) and Dussidorf (1827). In 1831 he minused if the list list diamate successive was with the historical transition. and the succession was with the instantanting the s. Dis Fran nopelin ter 1(1 27) and Karser Friedrick II (1828). In 1831 appeared the mystic poem Meet n. Other novels. I primen (1836) the list mutation of the tree computation, and inite ton of vocte's commuterin, ind his modern relist; satire Munchausen (18/8) we the bist known see H. Mayne Immern (an hi Menn und sein Wert 1921 - I. Knys I, Immermann und da I Oberfeller II (aler 1)

Immigration Act of moving into country for the surpose of settling there it is the converse of emigration (q) under which heading the cluses of trans-transe of pure from one country to from 1820, and showed in increase fraction of pure from one country to from 185,000 in 1821 of to 216,000 in mother have the ideal which dealt with Jul 1881 90. As stated legislation passed in mother have the depth deal with In 1881 on as stated agriculture in modern times more and incredit item in 1881 on the next deads of ved a fall this being paid to the subject by goes. Thus the goes of But colonies now dominious laye in recent years offered a roll 1901 10 was 14 (0), or 1911 of 1911 of 1911 to of land a tablishing information bure us in Lordon, and alvertising their own resources. Agreet cause of I in the past as inverviewed to the past and freland. Pelite it conditions and the as inverviewed to the beat the flight of the personal decision of the persona land This extends enturies back be yond the steam of Jews and political refugees from Nati Germany before the Second World War The ship Ma flower left Fugland carrying to America settlers who fled from religious oppression under James I in 1620 Another old example of the effect on the dispersion of pep due to religious severity, was the revocation of the edict of Santes by Louis XIV of France, driving thousands of Fr. Protest ants from his country. Many of these

wat h making, etc. There has been a long term general rise of I in the last critury, and indeed (with certain isservations) it is an inevitable sign of social and conomic progress throughout the world Contrainer, it is a sign of bu ward movement and an unwholesome state of the nations when there is too stringent a watch upon the immigrant

but there is another side to this matter as long as nations are at so many different st ges of development, and the problem of the 'undernable alica' first faced the icference to a child that was to be born as a sign from God that hid should not be destroyed by Syria and I phraim. The mane occurs again in the Gospel of St. Matthew (1.23) when it is applied to Jesus the birth of the Me sual being taken as a fulliline it of the 11 ophics of fissible marked by the minimisers of the Messal being taken in the minimisers of the minimisers of the Messal Benefit (17) to the 1840, for you and the right of the minimisers of the Messal Benefit (17) to the 1840, for you and the right of the minimisers of the Messal Benefit (17) to the 1840, for you are the minimisers of the definition of the construction of the sound of the sound of the construction of the sound of the sound of the construction of the sound of the sound of the construction of the sound of the so In 1889 a committee of the House of in 1302 a loval Commission reported on it the resulted the framinal Allens Bill 1904, and the Alens Act, 1905 This ıt Aliens Act stated that an immigrant would b feld to be undestrable and could be repaired if he could not show that he was able to su port hims it and depend int if he was an idet a lunatic or suffing from disabling infilmities

the country which first coped with the t blem on the lirge t scale was the i i b ied 170,570 In the caring years of list cutting the in imprants to the list cd States came it inly from Britain and Ireland Pelits il opditions and the in thou of 1818 is disany Gers to be to America, and the flow continued the development of America's railway ten and opening up of farm lands in wheole from all pirts of W. Europe low reds 1900, mean is from S. and E. I mope began to redominate. Austra limingary, italy, an illussia furnished half the total numb. This caused an active among and the native America. who had even objected to the Irish in tormer years, and had declared that they however, always a tendency in the ordi-France, driving thousands of r. Protest hants from his country. Many of these went to Prussia, and were hospitably received by the Prussian king, and estable the property of which they contributed by their varied the old Duth families affected to despise the newer Eng. settlers. The Act of skill and industry. Others came to 1882, already mentioned was followed by

the Undesirable Persons Act of 1891, providing that every person arriving from abroad was to be examined and prohibited from landing if found to be a convict, lunatic, idiot, epileptic, contagiously diseased person, pauper, polygamist, prostitute, or auarchist. Allon Contract Labour Laws of the '50's and '90's pro-hibited anyone coming to the States to do any work under contract made before Exceptions were made in certain artistic professions. In 1921 a Quota Law fixed a definite number of immigrants for each nation, and in 1924 this Act was stiffened. In 1929 Britain was given the stiffened. In 1929 Britain was given the lead in its quota, but the total was further reduced. During the financial year 1930-31, 97,000 immigrant aliens were admitted into the U.S., against 241,000 in the previous year. For the first time since the Amer. Civil war, the ann. total was under 100,000; and it was evident that the States had abandoned their historic rôle of giving hospitality to the distressed and personnel the world over nistoric role of giving hospitality to the distressed and persecuted the world over. Of these 97,000, nearly 27,000 were from Canada, 9,000 from Britain, and 7,000 from Ireland. 13,000 came from Italy and 10,000 from Germany. Only 51,000 came in under the quota; the rest were from non-quota countries, chiefly Canada. In 1932 only 35,70 were admitted. The In 1932, only 33,570 were admitted. The increase of Chinese in America was also regarded with jealousy. It grew with the extension of the railway system, the discovery of gold in California, and the development of the Pacific Coast. The Chinese worked for far lower wages than would support a European and the gold. would support a European, and the agiwould support a European, and the agritation against them led Congress to suspend all Chinese I., by a series of Acts ranging from 1882 to recent years. In 1882 there were 130,000 Chinese in the States, but by 1920 only 62,000. They occupied mostly domestic situations, or worked in small shops, canneries, and laundries. Jap. I. to the U.S.A. began in 1869. They entered the country freely partit 1908, and numbered 30 000. but until 1908, and numbered 30,000; the diplomatic measures of the Jap. Gov. reduced the figure, and it was further diminished under Alien Laws. By 1921 it was 7878.

In 1938 the Brit. emigrants to the U.S.A. In 1938 the Brit. emigrants to the U.S.A. are given as 1992, and in 1947 they had risen to 18,555. It is to be noted that such figures are very easily confined, through certain statistics lumping all passenger traffic together. But it can be stated that the total Brit. tourist movement by sea to the U.S.A. in 1917 was 40,959. This compares with 51,000 visitors from the U.S.A. to Britain, restrictions. 40,959. This compares with 51,000 visitors from the U.S.A. to Britain, recorded in the same year, 1947. There were 3000 from Central and S. America in

1947.

Brit. colonies, or dominlons, have generally found it necessary to pass Acts to control I. The Australian Act of 1901 imposed similar tests to those mentioned in connection with Britain and the U.S.A. in connection with Britain and the U.S.A.

A language or educational test was included, and rigorous laws and regulations
were made as to the employment of
Chinese coolies, once engaged largely in
the cultivation of sugar-cane in Queens-

land. Similar legislation broadly applies to New Zealand. Other old Acts were the Contract 1. Act, 1905, and the Re-striction Acts of 1906, 1910, and 1912. New Zealand satisfactorily absorbed large numbers from Britain, and its pop., like that of Australia, became 98 per cent Brit. Excess of immigrants over end-grants was 14,219 in 1913, though by 1928 this balance was reduced to 443. 1928 this balance was reduced to 443, Owing to the loss of 60,000 men in the First World War, a plan was formed in 1920 to recruit and assist immigrants, particularly from Britain. The number of Brit. immigrants into Australia was 77,934 in 1913, 70,271 in 1926, 13,851 in 1928. In 1947 it was 13,012; and 5918 to New Zealand. The official handbook, Know Instratia (1916) stated that Australia was the first of the countless of Know Australia (1946) stated that Australia was the first of the countries of the Brit. Commonwealth to announce a the Brit. Commonwealth to announce a full policy of planned I. She had set a target of 70,000 new citizens a year, 'thinking first of Britain and then of Allied countries.' S. Africa passed similar laws to those of Australia. The question of the Clinese became of great importance there, because native labour was in-sufficient to supply the mining industries. The Brit. Gov. in 1904 passed an ordinance The Brit. Gov. in 1904 passed an ordinance allowing the importation of Chinese labour, which was strongly opposed by the Liberal Party. In 1906 55,000 Chinese coolies were employed in the Rand mines, but the Transvaul Parliament abolished the system, and by 1910 had reputriated all the Chinese. By 1938 S Africa's I. policy was to attract suitable settlers with central and those was no denoral forms. capital and there was no demand for unskilled labour from abroad. The ligures of Brit. 1, into S. Africa were 25,855 in 1913; 30,293 in 1928; 26,142 in 1947. The Canadian Gov. in normal times has offered great inducements, especially to farmers, to settle in Canada, and in 1911 185,000 persons went there from Britain, subsequent measures of discrimination, like the laws of other countries, reduced the numbers to 83,886 in 1926, 89,571 in 1927, and 95,307 in 1928. In 1929, there were 58,880 Brit. imnigrants; in 1930, 64,082, and in 1931, 27,584. Many settlers also go to Canada from the U.S.A. The world-depression of 1930-32 resulted in the cutting down of those figures to a very low point. Jap. were limited severely and Chinese excluded from settling in Canada. (See also Emigrarion; EMPIRE SEPPLEMENT.)

I. on a large scale has taken place to the countries of S. America. In the Argentine Republic, the Homestead Law of 1917 aimed at relieving the irksomeness of colation in remote districts by placing together people having the same language. cu-toms, and traditions. Most of the immerants were It. and Sp., and the same preponderance has been true of Brazil. In 1916, the Peron Gov. of the Argentine Republic announced a long-term plan for closing to stress the vast complexity which has been added to the subject since the mass movements of refugees prior to the Second World War, and the countless difficulties of the present 'melting-pot' state of peoples throughout the world.
The following are some recent statis-

after-life being looked upon as little more than a continuation of the earth-life. An chain a continuation of the earth-life. An elaborate philosophy of the after-life is found in Egypt, and lengthy accounts are given in the Book of the Dead, telling of the descent of the spirits to the judgmenthall of Osiris. Reproductions of many of the pictures of these scenes are well known.

U.K. PASSENGER MOVEMENT (including pleasure cruises)

	1934		j	1917
	Inwards	()utwards	Inwards	Outwards
By sca. Europe Eire Out of Europe By air.	1,751,000 543,000	1,729,000 524,000 261,000 99,000	1,220,000 490,000 182,000 359,000	1,160,000 472,000 245,000 402,000
Total: .	2,616,000	2,616,000	2,2 11,000	2,279,000

DESTINATION OF BRITISH EMIGRANTS. Among the Indian peoples of the East a (British nationality only) different view of the journeys after death

	1938	1947
Brit, N. Africa	3,367	22,96
Australia	5,472	13,01
New Zealand	2,425	5,91
Brit, S. Africa	6,003	26,14
India and Ceylor .	.,,,,40	10,37
Other Brit, colomes .	6,201	19, 19
Total Brit. dominions	29,008	98,00
U.S.A	1,992	18,55
Foreign countries .	3 144	5,0%
Total:	34,114	121,64

(Board of Trade Statistics for Sailings from Europe, the Dominions, India etc., and from the U.S.A. inwards to those continents or countries, afford no indication of the number of immagrants as opposed to passengers.)

to passengers.)
See J. W. Jenks and W. J. Lanck, The
Emigration Problem, 1922; Bertrand
Russell, Problem of China, 1922; J. W.
Gregory, Menace of Colour, 1925, and
Human Migration 1928; A. M. MacClein,
Modern Immigration, 1925; also Board
of Trade Tables of Emigration and
Immigration; Board of Trade Journal
(monthly); and Year Books of British Dominions.

See also ALIEN; CHINESE LABOUR QUENTION.

Immingham Dock, 5 m. N.W. of Grinsby, was constructed (1906-12) by the Great Central Rulway Company on the S. shore of the Humber. It has a capacity of 1,21,600 cubic ft., and an employed the Humber of the Albert of the Humber area with, adjoining property, of about 1000 ac.

Immortality (Lat. in, not, and mortalis, mortal, connected with mors, death), the continued existence of the human soul after the death of the body. In some form or other, the bellef in human I, is practically universal. In even the most primitive animistic cults its influence is clearly discernible, while in all the higher cults it forms an important section of their philosophy. In the more primitive cults we have the provision made for the journeys and sustenance of the departed 'soul,' the in the immediate demise of the crown,

gave use to the belief in the transmigration or souls. After death the soul passed into the body of some fresh being, higher or lower in the social scale, according as the life had been good or bad. Buddhism made no alteration in this doctrine, except that it furnished a final goal in the attainment of Nirvana, which, involving as it does the annihilation of personality, can bandt be described as I. It has been dis-puted whether the Hebs, had any idea of 1 before the exile, and there is much in the biblical books which would lead one to suppose that they had not (for varying conceptions of Sheol, see HVLL); it is certain that they considered the after-life as at most only a shadow of this life. Among the Hebs., the Persians, and the other semile tribes, the idea of L. is generally associated with the resurrection of the body. To the Giss., while many of them (e.g. Sicrates, Plato) held the L. of the soul, the resurrection of the body was entuch toteign to their thoughts. The unistrin faith teaches both the of the soul and the resurrection of the body. Paul (1 Cor xv. 44, etc. and to the First I pistle to the Thessalomana), teaches this ic all, and he also lay stress on the im-port of fact that the resurrection-body is ind cernal, but spiritual. See S. Salmond, Christian Doctrine of Immortality (4th ed.), 1901; R. Charles, Critical History of the Doctrine of a Future Life, 1897; J. Erdman's History of Philosophy (vol. 11., Since Henel), 1921; J. G. Frazer, Man, Got, and Immortality, 1927; J. Baillie, 1nd the Life Everlashno, 1934; H. Keyscrling, Immortality (1tans. 1938), Immortality (1tans. 1938), Corporations (q.r.) (including the king, who is legally a corporation sole) are, in law, incapable of dying. This is one of the reasons for the old mortimal statutes which were directed not cirnal, but spiritual. See S. Salmond,

old mortmain statutes which were directed against the conveyance of lands to eccles, corporations, it being against the policy of the law to allow land so to be tied up in perpetual ownership as to restrict the probability of its free circulation. The death of the reigning monarch is conatitutionally merely an event which results

though formerly there was a real interregthough formerly there was a real interreg-num between the death of one king and the election and coronation of his suc-cessor; with the result that the state had, in the interval, no one to represent it for the purpose of maintaining order. But this fictitious I. of the king did not get rid of the rule that Parliament was necessarily discolved by the death of the king aldissolved by the death of the king, although it was appreciated that the consequences of a sudden and automatic dis-solution were highly inconvenient, es-pecially in regard to taxes, the collection of which could not be enforced in the absence of a proper authorisation. It was not till 1837 that an Act was passed providing for the continued existence of Parliament for six months after the death of the king unless somer dissolved by his successor. For the other legal and constitutional effects of this attribute of I. in the king see Chows.

Immortelles. EVERLASTING FLOWERS.

Immunity from Disease, see BACTERIA-

1 mmunity.

lmola, tn. of Italy in the prov. of Bologna, stuated on the R. Santerno. It is on the site of the Rom. in. Forum Cornelia. The cathedral dates from 1187. but was rebuilt in the eighteenth century. There is an anet, citudel and a fifteenthcentury palace. It has a considerable trade in wine. In the second World War the cathedral, the church of St. Dominic, the church of S. Maria in Regola, the civio museum and the l'aterlini Palace were all slightly damaged by bombardment, but, singury demerged by comparament, but, generally speaking, the tn. did not suffer very severely. Pop. 41,500.
Imoschi, Omotski, or Imoski, tn. of Yugo-Slavia, situated in Bosnia and Herzegovina, 30 m. N.W. of Mostar. Pop. about 40,000.

Impact, the collision between bodies. The muthematical theory of the subject is not concerned with cases in which the I. results in the destruction of either of the bodies. When two bodies impinge, the time of I, may be divided into two parts the first known as the time of compression, during which even the hardest bodies suffer temporary loss of shape at the point of impact; and the second, the time of restitution, during which the natural shape is regained. The more elastic bodies are those which exert a greater effort to re-cover their shape; hence they rebound further. An inelestic body is one which makes no effort to regain its shape, which is permanently altered by I. In actual practice, no perfectly inelastic bodies have been found; but a lump of putty is an approximate example. A common experiment to illustrate this loss of shape in the case of a hard body is made by dropping an wory hall on to a greased marble surface. A ciscle of distinct size is found to be made, and a still larger circle if the

to be made, and a still larger error if the ball is dropped from a greater height. Newton found that the relative velocity of two bodies after a direct I. is in a constant ratio to the relative velocity before I., and is in the opposite direction. This ratio has been found experiment-

contact. It is known as the coefficient contact. It is known as the coefficient of restitution, and in mathematical formulus is denoted by ϵ . Thus for two glass solids $\epsilon = 0.94$, for two very solids 0.8, and for one of iron and one of lead 0.13. The example given first approximates as nearly as anything else in practice to a state of perfect elasticity. The mathematical theory is based in the light place on considerations. based in the first place on considerations of the L. of smooth spheres and planes. When the surfaces in contact are rough, and the I. is not direct, rotations are set up, and the results have to be modified. First consider the direct L of two spheres that is, two spheres which impings in such a way that their line of centres is the same as the then two lines of motion. Let m, m_1 be their masses, u, u_1 their velocities before I., and v, v_1 their velocities cities after I. All velocities are men ared in the same direction, and if the spheres are moving in opposite directions u or u1 will be negative. Since at I. the impulse received by one body is equal and opposite to that received by the other, the momenta received are equal and opposite. Hence the total momentum in either direction in the line of motion is unaltered by I. Hence follows the equation $mu + m_1u_1 + mv + m_1v_1$. Again, Newton's Experimental Law states that the relative velotive velocity between two equations are e^{-u_1} . These two equations are then sufficient to determine r and r, the then sunction to determine rain r₁, the velocities with which the bodies move off after 1. Thus, in particular, a ball falling to the ground with velocity a rebounds with velocity e.u. It will rebound a second time with velocity e.u, and so on, when the L is oblique, the components of the initial velocities perpendicular to the line of centres at L are maltered. This gives two equations stated above hold equally for the components of the initial velocities resolved along the line of centres. and hence there are four equations which will determine the two new velocities and the new directions after impact. In the former case, the kinetic energy before impact is $\{mn^2, \{m_1n_1^2, and after impact is \} \} \{mn^2, \{mn^2, and after impact is \} \} = \{mn^2, \{mn^2, and after impact is$ $\frac{mm_1}{m}$ $(u - u_1)^2$. Hence this ex-

pression represents the kinetic energy lost by the I. It chiefly tempears in the form of heat.

Impanation, literally embodiment in bread (Lat. punis), a theological or eccles, term adopted by some of the earlier Protestants and used in the controversion in regard to the Real Presence of Christ's body in the bread of the Eucharist. applied to a local presence or inclusion of Christ's body in the bread after consecration, an hypostatical and personal union of the brend with Christ's body. It differs from Transubstantiation (q.v.), and has sometimes been used loosely as equivalent to Consubstantiation.

Impatiens, large genus of balsaminac-eous plants which occurs in warm and tropical countries, and is so called from the sudden and elastic force with which the

species burst their capsules. I. bal-samina, the common balsam, is well known in Brit. conservatories, and I. Noli-me-langere, the touch-me-not, is also a com-mon plant. The valves of the capsule roll inwards when touched, or fully ripe, jorking out the seeds, and the plant emits

an umpleasant odour.

Impeachment, arraignment before the High Court of Parliament of a minister of The first recorded everyise of the power was in the reign of Edward III., when Latimer and Neville were impeached for the fraudulent purchase of crown debts and for removing the staple from Calais. I. is a judicial proceeding in which the Commons act as a cusers and the Lords, in pursuance of the long settled rule that the judicial powers of Parliament are vested exclusively in the Upper Chamber, as judges. A member of the House of Commons moves the L in the first instance, and if the motion is carried the accused is impeached by a deputation of numbers at the bar of the House of Lords. Articles of I, are drawn up and copies submitted to the lords and to the The but then arrested and accused. detained in the custom of the Black Rod. The prosecution is conducted by certain of the commoners, who are styled managers. The Lords deliver a verdict upon agers. The Lords deliver a verdict 'upon their honour,' and where a verdict of guilty is found sentence is not passed until the accusers domand it. The prisoner may move the court in arrest of judgment. The Act of Settlement provides that no pardon from the crown can be pleaded to an I. Where the accused is a peer, the Lord High Steward (4,r.) pre-sides, where a commoner, the Lord Chancellor. I. is now virtually obsolete. Public opinion has for years been a far stronger inducement to ministers not to abuse their powers than the terrors of an I. Formerly, however, it was a valuable weapon in the hands of the House of Commons for controlling the actions of the crown ministers. But there is no doubt whatever that the power was grossly abused. Ministers were often impeached for reasons which in these days would merely form ground for strong party differences. Perhaps the most fam ous case of I. was that of Lord Chancellor Bacon on a charge of receiving bribes. This I. was important in that it re-affirmed the right of the Commons to hold ministers responsible for their acts to the nation. The Is. of George Villiers, auke of Buckingham in 1626, and Thomas Wentworth, earl of Strafford in 1626 and, Archbishop Laud in 1640 seem in modern eyes to do no more than exemplify the varying for-tunes of party warfare. One of the tance of party warfare. One of the adams any sign of receition (see Mommspecific charges against Buckingham was that of accumulating offices. In these days patronage in one form or another is a forequent subject of hostile party and Press comment, but the law officers of the crown would hardly suggest an I. Both Went would hardly suggest an I. Both Went would hardly suggest an I. Both Went wine, and olives. Pop. 146,000. (2) A city of Liguria, cap of the above prov., on subvert the fundamental laws of the charge does not alter the fact that Wontworth's foreign policy and Laud's papist tunes of party warmer. One of the specific charges against Buckingham was that of accumulating offices. In these days patronage in one form or another is a

views and sympathics did not happen to meet with the approval of a stern Puritan parliament. parliament. The last is, were those of Varren Hastings in 1788 and Lord Melville in 1806 for alleged malversation of office. But even before that time the principle of ministerial responsibility (see Cariner; Government) to Parliament had become what thow !s—the funda-mental safeguard of the whole principle of representation.

The procedure on I. is similar in the US.A., in which country the most famous case was that of President Johnson, in

1868.

Impenetrability is generally accepted a-one of the properties of matter, viz. that two different portions of matter cannot occupy the same space at the same time. When a null is knocked into a piece of wood, it takes up its new position by displacing certain particles of the wood. Many experiments were made to disprove the theory, notably one, in which a metal grobe was completely filled with water and then compressed until the outside was seen to be covered with moisture. But this was explained as merely proving that particles of water could be forced by tween the particles of metal. A pint of water and a pint of alcohol make a mixture of ics, than two pints, but this is due to the fact that in the mixture the mole cules are closer to one another. On the other hand, the many theories recently advanced of the composition of atoms make it doubtful whether they possess the property of 1.

Imperator, passenger and mail steamer of the Hamburg-Amerik i Line, launched by the Kalser Wilhelm II in 1913, but

later called the Berngara (q.c.).
Imperator, in Rom. hist, the title given, in the republican period, to the victorious general and laid aside with the surry inder of the military command; but, in 16 a.b., conferred on Casar for life. Char bore is at first as governor of Gaul in the usual way; but the retention of the title after the termination of his generalship and the celebration of his trumph, was new. Here was laid ground for a distinction between the permanent title, which was subse-quently prefixed to the name, and that which was temporary and therefore capable of repetition, which was placed after the name. But Casar, even when he had been called in the former some, imperator once for all, was yet after the gaining of victories, saluted by acclamation on the buttlefield as imperator; he never hore the title, however, prefixed to his name, out called himself and made others call him simply Casar imperator—without adding any sign of repetition (see Momm-

Imperial Air Routes. see Air Mail, etc. Imperial Airways, the name of the body formed, in 1921, by the four Brit. air-lines—Handley-Page Transport, Instone Air Line, Daimler Airway, and the British Marine Air Navigation Company. The board comprised representatives from the absorbed coys, together with directors appointed by the gov. Under the Brit. Overseas Airways Act the British Overseas Airways Corporation came into being in 1939, with 3 members appointed by the Secretary of State for Air; and in the following year the new corporation acquired the undertaking of 1. A. and of British Airways Ltd.

Imperial Bureau of Mycology, sec 1M-PERIAL MYCOLOGICAL INSTITUTE.

Imperial Canal, see GRAND CANAL. Imperial Chemical Industries, Ltd. great combine which controls a large number of other concerns, the chief of which are British Copper Manufacturers; British Dyestuffs Corporation; Brunner, Mond & Co.; Cassel Cyanide Co.; Castner-Kellner Alkali Co.; Excelsior Motor Radiator Co.; Imperial Chemicals Insurance; Kynoch Ltd.; Nobel (Australasia), Ltd.; Nobel's Explosives Co.; Sedgwick Gunpowder Co. and Welsbach Light Co. Its authorised capital is £95,000,000, and ite chief productions are acids, alkali, ammonia, artificial leather, chemicals, cycles; and motor cycles, detonators, dyestuffs, explosives, fortilisers, lime, non-ferrous metals, and safety fuses. The first chairman was the late Lord Melchett (q.v.); the ber of other concerns, the chief of which metals, and safety fuses. The first chairman was the late Lord Melchett (q.v.); the man was the acc Lord McGowan. The chief offices are Imperial Chemicals House, Millbank, London, S.W. (present office: Nobel House, Buckingham Gate, London, S.W. 1). Judged by world standards, I.C.I., with a normal estab. of 70,000 employees, is only comparable with simple ployees, is only comparable with similar chemical organisations in the U.S.A., but small indeed compared with the I. G. Farben of Germany and the State Corporation of Russia. The company's achievements in the invention and development of products and processes were of direct importance in the national war effort. Thus the company turned out half a million tons of sulphate of ammoria a year—essential to fertilisers and to the grow more food 'campaign. During the war almost 400,000 tons of explosives were made in the coy,'s factories besides hundreds of millions of detonators, fuses, and incendiary bombs. I.C.L's greatest contribution in the field of special weapons was the Projector, Infantry, Anti-tunk Gun, better known as the P.L.A.T. and the most effective weapon of the infantry against tanks or fortifications. Another weapon was the 'flying dustbin,' which, mounted on a tank, helped to blast a way through the West Wall and the fortified wils, of Normandy in 1944. On the coy. fell the borden of producing small arms ammunition until new gov, factories could be built; by the end of 1944 they had turned out over 3500 million rounds. They were also responsible for developing mass-production methods for the small arms incendiary bullet—a weapon which completely surprised the Gers. and caused as a private venture to students in Oct ..

them great losses of aircraft at a critical stage in the war. The cupro-nickel con-denser tube was a notable contribution to the increased fighting elliciency of Britain in the war and a large number of the bigger warships were fitted with tubes made by the I.C.I. A new factory was built to make metal fuel tanks for aircraft and, later, technicians developed the technique of making the tanks bullet-proof. Plastic materials were in great demand for war in the air; the coy, s invendemand for war in the air; the coy, 's inven-tion of 'Perspex' (see Chemistray; 'Plas-ries') was widely used as a non-splintering glazing naterial for aircraft. Polyvinyl chloride, another plastic, was useful to replace rubber in flexible cable coverings. An outstanding achievement in the field of plastics was the discovery of polythene or polymerised of hylene. It proved to be a valuable insulating material for high-fre-quency radio and television. Without polythene, Radar could never have been

developed so rapidly or so efficiently.

Imperial College of Science and Technology, a federation of three institutions: the Royal College of Science, the Royal School of Mines, and the Central Technical College of the City and Guilds of London (escentially a school of engineering), situated in S. Kensington. In 1906 an official committee proposed that these three institutions should be brought together in such a way as to establish at S. Kensington 'an institution or group of associated colleges of science and technology where the highest specialised in-struction should be given and where the fullest equipment for the most advanced training and research should be provided. in various branches of science, especially in its application to industry. Their report resulted in the creation of the I. C. of S. and T., with the three above men-tioned institutions as its constituents, the college as a whole being a school of the Univ. of London. Its predominant function in the sciences, mining, metallurgy, and engineering, is to train students for direct service in industry and agriculture.

The above mentioned institutions were themselves related to yet earlier institutions from which, accordingly, the I.C. tone from which, accordingly, the Locan claim descent. The earliest of all was the Royal College of Chemistry, and the Royal College of Science has its origin in the incorporation in 1853 of the gov. School of Mines and of Science applied to the Arts with the still older Royal College of Chemistry. Brit. chem. owes much to the enthusiasm of those who, a contury ago, saw their country's need of laboratories like those of Liebig and of Wholer at Glessen and at Gottingen, and endeavoured to obtain support for a new institution to be named the Davy College of Practical Chemistry. In 1843 they came near to success in an attempt to secure accom-modation in the Hoyal Institution; and in 1845, when that had falled, they organised a campaign of publicity among all classes. Their efforts were successful, for a constitution was given to the college; its first council was elected and Prince Albert became its first president. It was opened,

1845, in George Street, Hanover Square, [and on Dec. 9 its title was changed to The Royal College of Chemistry. The first prof. of this college was August Wilhelm von Hofmann, then a 'privat docent' at Bonn. Hofmann stayed till 1863 when he was appointed prof. of chem. in the Univ. of Berlin. In Holmann's tirt year of office the college moved from its temporary quarters in George Street to a new building in Oxford Street. The college binding in Oxford Street. The College was, as stated above, incorporated with the Government School of Mines and of Science applied to the Arts (founded in 1891, b) do la Berche, the famous Eng geologist (q.r.), on a site between Jermyn Street and Piecadilly), and later to become Street and Precamity, and Pitel to become the Royal School of Mines and, at S. Ken-sington in 1881, the Normal School (ulti-mately the Royal College) of Science. Assisted by Lyon Playfair Prince Albert secured the purchase, with funds at the disposal of the Commissioners of the Exhibition of 1851, of the site in 8, Kensington on which the Imperial College now stands. It was Prince Albert's initiative in urging the holding of the great Exhibition, against public opposition and without much initial support from industry, that was largely res vi for the fact that the commissioners had funds to spend on endowing the arts and sciences in this and other ways. The third constituent institution of the L.C., the City and Guilds College, owes its being to the corporation ! and Lavery Companies of the City of London.

But the steps whereby all three constituent institutions came at last to be associated at S. Kensington is a complex one, which may only be disentangled from numerous letters, memoranda, and do-partmental minutes, many of which are cloquent of divergent aims and interests. The major opposition was that which lasted from 1831 to 1881, between Huxley and the Science and Art Department on the one hand, and the 'mining school party' led by Murchison Perev and Warrington Smyth on the other. Huxley's party wanted a great metropolitan school covering all branches of applied science, but the other party feared that extensions would hinder the development of de la Beche's school in Jermyn Street and lose its affiliation with his Museum of Practical Geology. But these divorgencies were gradually reconciled, particularly as accommodation became more common-surate with the teaching given. The fluctuations of this story are shown in the ceasoless changes in the names attached to ceasoless changes in the minus according to the constituent colleges, and it was not until 1907 that the three came to have their present names. The L.C. of S. and T. is a 'peak institution' comparable with the Massachussetts Institute of Technology, and the 'alliance' concluded with that institution in 1944 was a recognition of community of aims and interests. Its Charter estab. it 'as a School of the University of London' and its Visitor is the king.

The Charter of the college provides that, subject to agreement with the authorities of any college or other insitution, the Committee, constituted in July, 1929, on

governing body may recognise that college or institution or any dept. of it as being in association with the f. C. for all or any of the purposes of the Royal Charter of 1907, but no such resolution is to be opera-tive until allowed by the King in Council. The Dept. of Metallurgy of the Univ. of Sheffield has been so recognised for the Advanced Metallurgy of Iron and Steel.

The I. C. is organised into these depts: aeronautes (including aerodynamics); biological depts, (including biochem., botan', and zoology) chem. technology (including chemical engineering, fuel and refra tory materials, applied physical chem.); chemistry (including organic chem., morganic chem., physical chem., agricultural chem., and the chem. of food and drugs); engineering, mechanical and motive power; engineering, civil and surveying (including highway civil and surveying (including nighway engineering); engineering, electrical; engineering, chem.; geology (including nuturing geology, and oil technology); noathematics and mechanics; inctallurgy; including minima surveying); mining (including mining surveying) physics (including astrophysics, technical optics, instrument design, meteorology, and applied geophysics).

The administration is vested in a Governing body of forty-seven members representing the Crown. India, the selfgoverning Dominions, the Board of Edu-cation, the Univ. of Loudon, the London Co-Comeil, the City and Guilds of London Institute, the Royal Commissioners for the Exhibition of 1851, the Royal Society, the Professorial Staff of the Imperial College, and the learned societies concerned with ministrative officer of the L.C., for the

time being, is also a member. Imperial College of Tropical Agriculture, incorporated in 1921 as the outcome of recommendations made in their report by a committee appointed by Lord Milner in 1919 (see Cind. 562). The object of the college is to promote the study of tropical agriculture in suitable surroundings, and to creat a body of Brit, expert agricultunsts well versed in the knowledge of the cultivation of land in the tropics, of chamsts, and of scientine advisors posses-sur an intimate knowledge of the means of combating pests and diseases and to conduct research. The college buildings are at St. Augustine, near St. Joseph. Trindad. The finds are derived from contributions from colonies and industries participating in the movement and an inverted grant. The Imperial Dept. of Agriculture founded in 1898 was amaiganated with the college in 1922. Post. graduate courses are open to holders of a degree or diploma of any Brit. univ. or other academic in-titution approved by the governing body of the college. Retresher courses are open to officers of ague, depts, in the tropies, or similar in-stitutions. There is also a three-year diploma course pensarily intended to give instruction in W. Indian agriculture, besides a two-year course in sugar technology.

Imperial Communications Advisory

the recommendation of the Imperial Wire-less and Cable Conference, 1928, to act in an advisory capacity in regard to tele-graphic communications. The formation of the Committee may be regarded as the corollary to the merger of cable and wireless interests which took place in 1928. is composed of eight members representing the Home and Dominion Gover, Colonies and Protectorates, and it is charged with cortain responsibilities relating to the activities of Imperial and International Communications Limited—the public utility company which was formed in accordance with the recommendations of the Conference previously mentioned, for the purpose of co-ordinating the telegraphic services (cable and wireless) connecting the various parts of the Brit. Empire. The Committee is concerned with questions of policy regarding, in particular, the in-titution of new services, the discontin-uance of existing services, and the dis-tribution of traffic between alternative tribution of traine netween atternative routes. In 1944, on the nationalisation of the Cable and Wireless Company, the L.C.A.C. became the Commonwealth Communications Council, its former duties being somewhat extended owing to the nationalisation of the Company. The nationalisation of the Company. The Council will probably disappear in its turn, to be replaced by the Telecom-nunications Board.

Imperial Conference, constituted by resolution of the Colonial Conference of 1907 to the effect that such a conference should be held every four years for the discussion of questions of common interest as between the Brit. gov. and the govs. of the self-governing Dominions beyond the cas. The Prime Minister of the United Kingdom acts as ex-office president, and the Prime Ministers of the Dominions are ex-officio members; the Secretary of State for Commonwealth Relations (formerly Socretary of State for Dominion Affairs) is also an ex-officio member and deputy president; and, in addition, such other ministers as the respective gove may appoint may also be members. Except by special permission of the conferences, each discussion is conducted by not more than two representatives from each gov., and each gov. has only from each gov., and each gov. has only one vote. A resolution was passed in 1917 to allow of India being fully represented. The Irish Free state dator Eiro) was instrepresented at the I. C. of 1923. There is a permanent severational staff under the Secretary of State for Commonwealth Relations, appointed to keep the sev. govs, informed during the periods between the conferences in regard to matters which may come up for discussion. The I. C. grew out of the Colonial Conferences, of which there were four prior to that of 1907—three in London and one in Ottawa. At the first, held in 1887, the most prominent question was the organi-ation of Colonial defence, and an important agreement was arrived at for

tions between the colonies (they were not then styled 'dominions') and between the colonies and the mother country was considered at the Colonial Conference held at Ottawa in 1894. At that conference the decision was taken to lay a cable between Canada and Australia, work on which was begun in 1902. At the conference of 1897 Imperial preference was the chief question, and Imperial defence also received much attention, Cape Colony contributing money for a first-class battleship. In 1902, the year of King Edward VII.'s coronation, advantage was taken of the presence in London of Colonial Premiers to discuss the political and commercial relations of the Empire and its naval and relations of the Empire and its navai and military defence. Then came the Colonial Conference of 1907 (which passed the resolution mentioned at the opening of this article), in which the Frime Ministers of all the self-governing colonies took part, including the Transt and, where the first elections under responsible gov. had just taken place. taken place. At this conference all the members except the gov. of the United Kingdom re-affirmed the resolutions of the 1902 conference on preferential trade within the Empire; but the gov. of the United Kingdom was unable to admit either the necessity or the expediency of altering the fiscal system of the United Kingdom. In 1909 a Defence Conference was held in consequence of part, discussions on the naval position, and as a result of the Conference various dominions placed orders for cruisers or made imaneral contributions.

The first conference which was officially styled 'Imperial' was held in May June, 1911, the chief questions considered being the constitution of the conference, interimperial consultation regarding Treaties, mornition, naturalisation, the treatment of Indeas in the Dominions, cable B. n communications, and uniform treatment of But, shipping. Arising out of this con-ference a Royal Commission was appointed to report on the natural resources and trade of the Empire, and the work of this Compassion has undoubtedly acted as a stimulus in this direction ever since (see also LAPERE, MARKETING BOSTO; IM-PERIO ISSUIUTE: IMPERIAL ECONOMIC COMMITTED. During the First World War the normal L. C. was postponed and over-as representatives were temporarily made members of the War Cablinet (see Cv. 1812, J. MPLRIAL, W.R., At the Impered War Conference of 1918, apart from confidential deliberations on the prosecution of the war, the most important resolutions dealt with the future economic policy of the Empire respecting raw materials. At the close of hostilities in 1918 representatives of all the self-governing dominion, were unmediately summoned to take part in the discussions in London over the peace negotiations, and also in the work of the Peace Conference in Paris. There was also a Conference of Prime Ministers important agreement was arrived at for the authorities and representatives of the United Kingequadron. Other questions discussed were domained and the dominions and India held in mail services, Imperial penny post, and London in 1921 under Mr. Lloyd George. The Conference considered in detail the The question of trade and communicaforeign policy of the Empire with special

reference to the League of Nations, which | and supply of munitions and raw materials had not then been formed, and say | as well as of food and feeding stuffs | De meetings were devoted to discussing the naval, military, and an defence of the Empire The I C of 1923 reached a common understanding on the main beeds of foreign policy, subject (as always in the case of resolutions by an I C) to ratification by their acv gove. In that year an importal Economic Conference was held to consider in detail the economic relation; consider in detail the economic relation; not without interest to note that, on the between the sev parts of the Impare and all aspects of imperial trade, including imperial preference (q|r|) overseas settle unit (q|r|), co-operation in financial assistance to imperial development, the Imperial Institute (p|r|), and the establoof is all including the imperial I conomic Committee (q|r|) and including the imperial I conomic Committee (q|r|) and including the imperial I conomic Committee (q|r|) and including the imperial Relations affecting inter Imperial Relations affecting inter Imperial Relations which were referred to a committee (q|r|) and other member of the conomic without interest to note that, on the first section without interest to not that, on the first section without interest to note that, on the first section without interest to note that, on the first section without interest to note that, on the first section without interest to note that, on the first section without interest to note that, on the first section without interest to note that, on the court interest to note that, on the first section without interest to note that, on the court interest to note that, on the first geometric forms without interest to note that, on the court interest to note that, on the first geometric forms without interest to note that, on the first geometric forms without interest to note that, on the first geometric forms without interest to note that, on the first geometric forms without any other and the first geometric forms without interest to note that, on the first geometric forms without any other and the first geometric forms without interest to not without interest to not the first geometric forms without interest to not the first geometric forms without interest to not the first geometric forms without any other and the first geometric forms without interest to not the first geometric forms without interest to not the first geometric forms of the first geometric forms of the first geometric f tions, which were referred to a committee tions which were referred to a committee of Prime Ministers and he did so fields; the presided over by I and I alfour (see Instruments of the content of the period of dominion legislation and merchant stapping was held in the operation of dominion legislation and merchant stapping was held in the obscussly lacks the effectiveness which the other prime in the subject of merchant stapping with the constitution through high commissioners again the subject of merchant and continued to the constitution of the committee of the committee. relations figured prominently in the 1 c. It is fining mainsters of the viscous was renewed on countries of the ominon walth was held the Beport of the Conference on the infection of the infect commonwealth could best co-operato in and pendent member nations and is such promoting disarm ment and world pence, the Head of the Commonwealth The basis On the (conomic side the Conference discussed the methods appropriate to the disclopment of interimperal trade—but no statement of policy was made out half of the gover of the United Kingdom of cition and coordination be in train the filly because no policy would have satisfing for and in organisation of It at 111 Dehed the Dominions which did not involve a radic il change in the fiscal policy of the l United Kingdom But by 132 Britain United kingdom But by 1/132 Britain had reverted to a protection t system and, thus strengther I was able though not without some dulledly to conclude a place that New Arry of Au Forcem series of trade agreements with the year of trade agreements with the year of trade agreements with the year of the New Arry of Au Forcem long dominion delegations who have the series of trade agreements. at the Imperial Leonomic Conference in Ottawa, 1932 (see O) FAWA (ONIFIENCE) Advantage was taken of the presence of the Dominion Prime Ministers in London for the coronation of George VI to hold an I. (, which was opened on May 11, 11).7 The Conference adopted a revised form of The Control of the principles underlying the recognition of the principles underlying the Brit Commonwealth of Nations The the Brit Commonwealth of Nations The Conference dealt mainly with foreign affairs and defence-it being obvious that the international situation was rapidly deteriorating. On defence, the conference discussed the ways in which it would be possible for the various govs to co operato in measures for their own security, including to operation in the production

tailed consideration on these and other matters was referred to technical com mitters was friction to friminal committees Certain constitutional quest tions were raised by the > African (for the South Albert, Con Heatry, whose that representative, Gen Hertzog (41) sought to carry the Signific of West ninett([7]) beyond its implications. It is not without interest to note that, on the outliet is soon ceased to he the national letter. A rejoit on treaty procedure, is

I to are to sew and far between

countries of the Commonwealth was held of the membership of the other Common wealth countries remained uncrang d

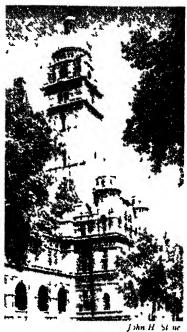
Imperial Defence, College of formed in I non in 1926 to create a basis for co t e The formation of in Imperial Guit d Staff, assisted by a Committee of In 1 and Defence may be regarded as the l t Ostudents down from the Navi Anna An Torce Inhan Army, and Anna rimion forces who are trained in Im ral Det me

Imperial Defence Committee, see (Ov MILLI OF IMPRIM DIFFINGE Imperial Economic Committee, catab in

11. The funct: of the committee were extended by it imperial Conferences of 1/26 and 1/30 and again as the result of the Report of the Impenal Committee on keenonik 'onsultation and (a operation in 1933 - Its present functions are ility of improving the methods of preparing for mrkt, and marketing within the I nited Kingdom the food products of the overseas parts of the Empire, with a view

to increasing the consumption of such products in the United Kingdom in preference to imports from foreign countries, and to promote the interests of both productrs and consumers to undertake in united into the production for export and mirketing in various parts of the world of the raw materials of the Empire to pre pare preliminary surveys of any branch of empire trade and marketing to report on any economic question which the govern ments of the Commonweilth may agree to uter to the Committee to undertake services transferred from the I impre Marketing Board (q 1) viz periodical mixt intelligence notes and world surveys of production and trade and to make proposals to gove in regard to other contents. economic services which in their view should be conducted on a co-operative basis it being understood that this does not give the committee any power to initiate proposals regarding consultation in respect of economic policy—the Com members mittee consists of twenty nominated by their respective govs tinanced by contributions from all the gove of the Commonwealth, and it reports

to those govs Imperial Institute. The I I building as erected at 5 kingington as the was creeked at 5 kensington as the national memorial of the jubilee of Queen Victoria, by whom it was opened in 1893. The prin object of the I I is to promote the utilisation of the commercial and industrial resources of the Empire by the chem and technical investigation of raw materials by the supply of information relating to such materials and their production and by the maintenance of comprehensive exhibits illustrating the commic resources of all the countries of the Propire overseas. In 1902 the Institut was placed under the Boar I of Trade by Act of Parliament, in 1907 the Colonial Office assumed the management with the Board of Trade and in 1916 was placed inder statutory control by the Imperial Institute (Management) Act of 1916 In 192) an Act was passed repealing the previous Acts, and transferring the Institute to the control of the farl secretary of the Dept of Overseas Trade, and providing for its management under that minister by a Board of Governor, and for the amal gamation of the Imperial Mineral Pe-sources Bureau with the Institute. The function of the manufacture of the compensation with the Agic, Mines and other technical derts in the Empire overses, by under thing investigations relining to the composition, uses, and commercial value of products which can be more efficiently conducted at home in consultation with merchants and manu facturers with a view to the lead utilisa facturers with a view to the next quairs, tion of the products or their export. It has laborateries for the examination of rubber, enant, and ceramic interials Samples of raw materials investigated can be inspected by interested inquirers. For the investigation and inquiry work of the vestitute time dearts have been toroused. the Institute two depts have been formed, viz Plant and Animal Products, and Mineral Resources A feature of the I I is its fine public exhibition galleries The collections in these galleries are supplied



THE IMPERIAL INSTITUTE SOUTH LINSINGTON TONDON

of the I I melade the I ull ten of the Im perial Institute, issued quarterly, a series of handbooks dealing with the commer cial i sources of the tropies, and virious reports

Institute of Entomology, Imperial Imperial Institute of Entomology founds in 1+13 to encourage and co ordinate entomological work throughout the I implie in relation both to hum in and animal discuses and to agriculture. It was known as the Imperial Bureau of Into mology until 1930 I he head office is at the Brit Museum (Natural Hist) Crom well Road London, 9 W. The Institute absorbed the Entomologial Research Committee appointed in 1909 with the ob-Committee appointed in 1909 with the object of furthering the study of economic entomology particularly in the Brit Fropical African Colonies and Protectorates. The Institute publishes a quarterly bulletin entitled The Bulletin of Fulumological Research and a mouthly review entitled The Review of Applied Entomology which summarises all current entomological literature bearing on in instance therets. jurious insects

Imperialism. In a general sense I means merely a system of gov. under an

emperor But the term I, as used in England prior to the I just World War had a narrower but much more pregnant sense, as incading the policy of those who aimed at a closer knitting together of the countries forming the Brit empire 1o latter day imputables 'the spirit of on pire's sounds an inspiring note and con ures up dreams of an A S federation or confract rulty of states the like of which for solidarity material and moral progress the world has never some But in its be ginnings I had no such heroic foundation It was an antidote to the doctrines of the Munchester School and a movement frankly mitrated in the intersets of national safety only. The secosion of the N American colonies from allegrance to the Englishment taught the lesson that the great colonics or dominions with re-presentative institutions are worths of consideration on an equal footing with the mother country and their equal status with that of the mother country is now a political commonplied. But another its political commonplace son it taught was of more immediate im portance it seemed to many that the grant or acquisition of self gov was but a step in the direct final emancipation, and that it must me vitably follow that one great colony or dominion after another would eventually be lopped away from would eventually be lopped away from
the trunk of the empire and in fact this
has already happened in the case of India
and har. Of a gritintously artificial
nature, to wis the furner commertal
policy between the mother country and
the colonies. It was hoped to keep the
colonies intuit by restricting the importation and exportation of colonial
goods to Brit ships manned for the mest
part by Brit scamen and this policy
enacted by the Navigation Act of 1660
was continued up to the time of the
repeal of the Coin Laws in 1846 and the
laying of the corner stone of Free I rade
in 1849 by the repeal of the Navigation
Act. That this stunting of colonial trade
hampered the material progress of the
empire was amply demonstrated by Adam
Smith and other economists. That it compare was amply demonstrates. That a policy of free trade with its consequent expansion of colonial power would accelerate the final disnomberment of the second no less robable. The empire seemed no les probable. The optimism of the Manchester School there forc, expressed itself in the puridox that the empire was really in a better position without colonies the were no longer com-pelled to open their ursts (Nusvels to the mother country and that it was un nocessary to retain them at all there follows lowed after the middle of the nineteenth lowed after the middle of the nineteenth century a period of more or less complete mutual indifference. The colonics fostered their manufa with the help of tariffs directed largely a_lant Brit good while Great Britain consistently ignored colonic tiado

The continuance of such a policy might well have been indefinite but for the sud den and lively perception of danger to the whole fablic of the empire from a hitherto unlooked-for source. The astonishing rise and progress before the First World War of the Ger empire, and its steady

policy of naval and military aggrandies—ment, awoke Brit statesmen to the real-lation of the comparative ease with which a state of not much inferior fighting stringth could, by shutting out food supplies cripple the Brit empire. The direct out one of this realisation was the Imperials movement, which found concrete expression in the Imperial Federation Lagus (founded in 1881) and the inaugus thom of colonial conferences (later style I Imperial (out rences (q v)). Flist movement received a fresh impetus from movem at received a fresh impetus from the vigorous administration of the colonial off e under Joseph Chamberlain, with whose name and that of escal Rhodes the purt of I in later years became primarily is served. Chamberlain inheriting the lift in of Beaconstield that colonial constitutions for from being steps towards disintegration formed part of a great pol-tey of Imperial consolidation, encouraged the cordial relations with the colonies by organising further conferences and inore the later conference by the almost simut theous rush of the Powers for pro-titrates and 'spheres of influence' in Min' In this rice for tr' (edl Rhodes) in > Africa, and Sir George Goldie (q':) in Wafrica augmented the Brit cupiro within the space of twenty years by a tid are exceeding that of the whole of I'm >> But even late in Rhodes's career hething was lacking in the direction of with this as well as other growing limbs f the empire Rhodes indeed on one usion threatened to seed altogether the norther country altered her in a towards S. Africa. It is here that the work of the Imperial Federation. I ague (a body which since the enhanced stats of the dominions overs as necessarily ceased to exist) did so not higher the head of the country of the state of the state of the dominions overs as necessarily ceased to exist) did so not higher the state of the s frits aim was to replace del nience by i im ition to lead up to a united empire or litition a union difficial from a mere chiony on the on law and on the chion an ant latt I like that of Casars of Napilcial bonaparte

the Casars of Napicen isonaparte

For a race grifted with the genius for
entire as was the Rom and as is the
But, I in its best connotation may
joinably be regarded as the crowning
form which the recent attains in the process
foreolution, (Grainb) for the empire
which cases to advince has begun to redefined philosopher is but a phase in the on
which movement of an imperial state of a
read estimed to only be In such a state
on thousants has recullar sanctity, no
fined influence in the middle ages the
two ideas, "nationality and independcompletion of the State system of Furope,
the rise of Prussia, and the transformation
of the half oriental Muscovy into the Empire of the tsars, and with the growth in
leutopean politics of the balance of power
thooty, a discipption occurred between

these ideas, and a series of protected the outcome of a proposal adopted by the nationalities arose. Eventually, the two principles, nationality and L., though strikingly analogous, are arrayed against the encouragement and co-ordination of each other. Britain conquers; but by the two throughout the Empire on the testimony of men of all races who have found refuge within her confines, she conours lees for hereaf than for humanity. It is this, the modern I. which has insensibly but surely taken the place of the anct. or narrower patriotism of England,

The Brit. Empire has certainly shewn

great stability in tunultuous times. Eve empires were involved in the First World War, and only the Brit, empiresurvived it. After that war the Brit. Empire adapted After that war the Drit. Empire stapped itself to the post-war age by a process of discussion and agreement and law-making, and by enlarging instead of destroving old freedoms. This is peculiarly exemplified in the development of dominion status (q.v.) through successive imperial con-

ferences

Left-Wing extremists, who dislike the Empire in the form in which some 'imperialists' represent it regard it as merely the instrument of 'economic imperialism' and all Brit. professions of 'trustecship' for the backward races as hypocrisy. They used to aver for example that vested interests were the sole obstacle to the prompt concession of absolute independence to India. But extremism is never likely to be a formidable danger, and the risk, such as it is, 'lies rather in indifference or misunderstanding among men of goodwill as to the meaning of the empire and the value of maintain-ing it. For many such the cause that fills their hearts in this post-war ern is the cause of international friendship and cooperation; and they feel that "imperial-

operation; and they reef that "imperations," however transmitted is somethow out of tune with "internationalism"."

The fact too that the Brit. flug flee over so great a part of the backward regions of the world is bound to excite the calousy and cupidity of other nations. The reply to these questioning is that the Brit. Empire serves not only the the Brit. Empire serves not only the interests of its own members, but also those of the world as a whole. As the world is at present constituted, no international order can achieve its purpose without sacrifice of national self-determination greater than the trued-out collection. ministion greater than the CR-q-out collec-tive system ventured to demand. In the meantime, 'It would be a fatal blunder to dissolve the international unity of our lesser league within the League' (R. Coup-land). The course of events in the Second World War confirms the case made for the Brit, Empire by both Professor Cramb and

the encouragement and co-ordination of work throughout the Empire on the diseases of plants caused by fungi. Since 1933 the Institute has been under the control of the executive council of the Imperial Agricultural Bureaux. Its work on the diseases of plants caused by fungi is broadly on the same lines as that of the Imperial Institute of Entomology (q.v.) in regard to insects. Its primary function is to assist economic inveologists in the over seas Empire by the accumulation and distribution of information on all matters connected with plant diseases and by the identification of specimens.

Imperial Preference is the title given to that policy by which the sev. members within the Brit. Commonwealth of nations within the Bril. Commonwealth of nations would impose tariffs to the disadvantage of those countries without the Commonwealth and to their own mutual advantage. The Corn Laws (q.r.) had produced an ardent hody of free truders led by Richard Cobden and John Bright, and their efforts led to the repeal of the Corn Laws in 1848. From that thee until 1932 Britain was a free-trade country—apart from the lovying of the McKenna dutes (q.r.) and the tariffs imposed on certain key industries. With the spread of imperialism in the eighties of last contary imperialism in the eighties of last contury came the spread of this idea of I. P., and in the early years of the twentieth century Joseph Chamberlain led a great but un-successful movement for the conversion of his countrymen to the policy of protection, nis country men to the policy of protection, with preference to the various members of the Brit. Empire. This policy was also advocated by Bonar Law both before and during his premiership. The movement was carried on by Lord Beaverbrook (q.c.), who founded and fectoral in 1920. As Exp. who founded and fostered in 1930 au Empire Crusaders Party with the avowed object of making Empire Preference a reality.

Under the Import Duties Act, 1932, a ten per cont ad ralorem duty was imposed on a wide range of imports, but free entry was given to all Dominion imports, and this freedom of entry was continued under the reciprocal trade agreements made after the Ottawa Conference (q.r.), of July, 1932. These agreements, which have been considerably modified provide for a tariff on a number of foreign primary pro-ducts for the benefit of similar Dominion products, and reciprocal tariffs against products, and reciprocal turing against foreign manufacturers for the benefit of the U.K. manufactured goods in the mrkts, of the dominions. Preferences are also granted to Brit. colonial goods, and also by many colonies to U.K. goods.

Brit. Empire by both Profess of Cramb and Professor Coupland and by many others. See J. A. Cramb, The Origins and Destiny of Imperial Britain, 1915; Sir C. P. Lucas, The British Empire, 1950-1930, 1931; Sir C. P. Lucas, A Short Instary of the Fromsion of the British Empire, 1500-1930, 1931; Brit. Coupland, The Empire in these days, 1835; R. Coupland, The Empire in these days, 1935; R. Muir, The British Empire; How at Grew and How it Works, 1940.

Imperial Bureau of Mycology. It was the qualification for the order. King

Edward VII founded the order in 1902, when the number was limited to 425.

was enlarged in 1912.

Imperial Tobacco Company (of Great Britain and Ireland), Limited, was formed in 1901, when some of the leading Brit. tobacco manufacturers joined forces to resist an attempt by a powerful associaresist an attempt by a powerful association of Amer. manufacturers to capture the Brit, tobacco mrkt. The original firms joining the I. T. C. retained their identity and became branches of the Company. The following is a list of the company's branches today: W. D. & H. O. Wills; John Player & Sons; Ogden; W. A. & A. C. Churchman; Stephen Mitchell & Son; W. & F. Faulkner; Lambert & Butler; Edwards, Ringer & Bigg; Franklyn, Davey & Co.; W. T. Davies & Sons; and Win, Clarke & Son.

The Company manufactures cigarettes.

The Company manufactures eigarettes, pipe tobacco, eigars and snufts for sale in The exthe United Kingdom and Eire. port business was sold to the British-American Tobacco Company, Limited, in

It has tobacco leaf buying organ-isations in the U.S.A., Canada, Nyasaland, S. Rhodesia, Latakia (Syra), and Brit. North Borneo. Fraddition to the purely tobacco side or the turners, the L. T. C. own, and controls a number of sub-idiary Companies engaged in the manut, of materials necessary to the tobacco trade e.g. cigarette paper, cardboard for making cartons, printing and packing materials, etc. The headquarters of the company and its central administrative offices are at Bristol. It has factories in Bristol, Nottingham, Liverpoot, London, Ip-wich, Chester, Swindon, Glasgow, and Publin The company's authorised capital is £55,000,000, of which £50,420,985 is

1936. It contains a large collection of naval and nuldary trophies and relies, ordinance, small arms and animunition, ships and other models, photographs, prints, books, pamphlets, and works of

art.

Impey, Sir Elijah (1732-1809), Chlef-Justice of Bengal, Indua. In 1773 he was made the first chief-justice of the newlyestab. supreme court of Bengal in Cilcutta, and was in close relations with Warren Hastings, the governor-general. In 1775 a native, Nuncomar or Nanda Kumar, who had succeeded Hastings as collector who had succeeded tustings as collector of Burdwan, brought a charge of peculiation against the governor-general, supported by Francis's and Hastings' opponents on the Council, Nuncomar was arrested on a charge of forgery, tried by L. condemned, and hanged. In 1777 1, device the condemned of th cided in favour of Hastings over the raticided in tayour of trastings over the ratification of the governor's resignation. He was recalled in 1783 and impeached for his sontonce on Nuncomar, but was acquitted. Macaulay's charges of a conspiracy with Hastings to contrive a judicial murder have been entirely disproved by Sir J. F. Stephen in The Story of Nuncomar, 1885.

Imphal, cap. of the native Assam State of Manipur (q.v.). It is really a collection of vils., whose combined pop. is 99,800. It was the theatre of the most critical battles in the Burmese campaigns. See Burma, SECOND WORLD WAR, CAMPAIGNS IN. Implement, in Scots law, the equivalent of performance of a contract or obligation

in Eng. law.

Implements and Machinery, Agricultural, see Agricultural Machinery and IMPLEMENTS: PLOUGHS AND PLOUGHING: TRACTORS.

Imports and Exports. Theoretically the exports of a country exchange for im-Theoretically, ports at such values that the former will pay for the latter, and it is probably true that exports and imports constantly tend to an equality. But it was long uncertain whether it was more advantageous to have a surplus aggregate value of imports over exports, or nec rersa. According to John Stuart Mill this uncertainty arose prim-arily from the traditional habit of looking rather to the profits of merchants than the price of commodities to the const. habit which, in its turn, rested on the longdiscrided belief that money alone was wealth. At the time of Mill it had become generally settled that the profit of foreign trade consisted in the difference between the price at which the goods were bought and carried, and the price at which they were sold. The difference between the gross money-value of the exports and unports of a country will give a rough idea of the amount of this profit. In England in 1863, 1864, and 1865, for example, the ratio of imports to exports was about 5 to t. This fact would have excited alarm before Adam Smith's time. The assumption would have been that England was issued. Imperial War Museum, opened at the to Mill, and to Professor Ashley, and Crystal Palace in 1920, removed to the others of the 'Free Trade' school of Imperial Institute, S. Kensington in 1921, thought ('free imports' would more acand to Lambeth Road, London, S.E. ii envisely express the doctrine), the only direct advantage accruing to a country from foreign trade consists in the imports; because, after paying with exports for the things it cannot itself produce, except at a greater expense of capital and labour than the cost of the exports, there is ar hypothese a surplus of labour and capital for the production of oth r thugs. Mill exthat the opposite theories assume that whit a country pure with, and not what it obtains, constitutes its gain; and adthat the benefit of fareign trade was that it afforded an outlet for surplus produce and enabled a portion of the capital of the oxporting country to replace itself with a prout. His criticism may be summarised profit. an exportable article in excess of its own wants from no inherent necessity, but as wants from no innerent necessity, but as the cheapest mode of supplying itself with other things. The inference drawn from this theory is that the only alter-native to experting in excess of wants would be the employment of the capital and labour thus set free in producing things previously imported, with a corresponding loss to consumers by reason of

process of interchange of commodities is not necessarily as simple as the statement of its fundamental principle. There is of its fundamental principle. the element of the cost of carriage, and it by no means follows that any particular imports can be allocated as the price of any particular exports, since any one given country trades with so many other countries. Moreover, exchange values are continually fluctuating within the limits of the ratios of the costs of produc-

higher prices. And this strife between papers and not according to average the capitalist, or producer, and the consumer is to be observed in all the fiscal duced by the importers and exporters, arguments of recent times. Of course, the tions) exported from the U.S.A. to Great Britain to-day are grain and flour, raw cotton and cotton waste, fish (especially salmon and lobsters), tobacco, bacon, bum, lard, from and steel, hides and skins, reined sugar, fresh fruit and vegetables, raising, and leather manufactures.

Below is the import and export table of U.S.A. for the years 1925, 1929, 1937-1947, while the prin. articles exported by the Brit. Isles to the U.S.A. consisted of tion in each country although they tend from and steel, cotton, linen and woollen

TOTAL TRADE (MERCHANDISE) NET TRADE (MERCHANDISE)

1 cor	Total Imports	Total Exports	Retained Imports	Exports of U.K. Goods
_	£	£	e	£
1913	768,734,739	634,820,326	659.168.008	525,253,595
1939	1919,508,933	532,279,966	857,984,000	470,755,320
1939	1885.943.767	184.731.554	839,479,000	438,806,075
1940	11.099.868.577	439,273,162	11.126,139,000	413,081,205
1943	11,885,000,000	237,600,000	1,232,600,000	232,000,000
1944	1.322,609,205	258,052,000	*1,306,941,000	265,046,000
1945	1,103,693,217	450,264,679	1,101,148,574	399,271,982
1946	1,297,682,580	1962,031,693	1,250,750,660	911.686,238
1947	1,787,170,975	1,196,250,569	1,728,303,711	1,137,683,305

Includes value of imported munitions.

* Excludes munitions—£658,446 000 (1943) and £1,062,164,000 in 1944.

Uncorrected figures.

to an ultimate equality in accordance with plece goods. Mill's law of the equation of international demand.

The most important items of Brit. imports are foodstuffs and raw materials, while about six-sevenths of the total exports are articles wholly or mainly manufactured. After the 1914-18 war, and as a consequence of it, there were extra imports in various countries due to payment of indemnities, and Germany, the prin-loser, was forced to export and thus the Allies to import; while repayment of inter-allied debts was a contributory fac-tor to further theoretical importing and exporting. The value of goods imported exporting. The value of goods imported is usually that at the port and time of entry, including cost, insurance, and freight (known familiarly as C.L.F.). Foods despatched for sale have their mrkt.-value recorded in the returns at the time of leaving this country, the value being based upon a declaration of the exporter. This is checked in the customs dept. Export goods are valued at the port of shipmont, while imported goods are valued at the country from which they were consigned, which is not always the place of shipment.

For the years 1913, 1938-40, and 1943-47 the values of imports and exports of merchandise relating to the United King-

dom were as shown above.
In the U.S.A. the values of imports and exports are fixed by invoices or shipping

The figures represent thousands of dollars :--

Year	Goneral Imports	Total Exports
1925	3,824,128	4,864,580
1929	4,291,866	5,373,613
1935	2,047,485	2,282,874
1937	3,083,668	3,349,167
1933	1,960,428	3,094,440
1939	2,318,018	3,177,176
1910	2,625,379	4,021,116
1941	3,345,005	5,117,154
1942	2,744.862	8,079,517
1913	3,381,319	12,964,906
1914	3,919,270	14,258,702
1915	4,135,941	9,805,625
1916	4,908,676	9,739,482
1917	5,731,662	15,337,511

COLD AND SHAPE

1			
1		Gold	
Y	car	Imports	Exports
11:	938	1,979,458	5.889
11	939	3.574.650	508
11	940	4.749.167	4,995
11	941	082,142	64
	912	315,780	102
13	943	101.793	32.855
13	944	113,836	959,288
	945	93,718	199,968
11	946	532,962	221.468
11	947	2,079,588	213,241

	Silver	
Year	Imports	Exports
1938	230,531	7,082
1939	85,307	14,630
1940	58,434	3,674
1941	47,053	5,673
1942	41,103	1,999
1943	27,903	30,689
1944	23,373	126,915
1915	27,278	90,937
1946	57,578	36,455
1947	68,140	30,649

The chief imports (excluding munitions) into the United Kingdom from Canada are dairy produce, particularly cheese and bacon, wheat, timber and wood pulp, motor-cars, and parts, and canned salmon; while Canada imports from Great Britain chiefly cotton manufs., iron and steel goods, clothing, spirits, coal, articial silk yarn, linen and woollen goods.

The imports and exports excluding gold and excluding foreign produce of merchandise of Canada for the years 1935 to 1947 are the ingures representing thou-

sands of dollars:

	Imports	Exports
1935	จ์จับ,อ เล	721,977
1936	635,191	937,825
1937	808,896	997,367
1938	677,151	837,581
1939	751,055	921,926
1944	1,758,898	3,439,9.3
1945	1,585,775	3,218,330
1946	1,927,279	2,312,215
1947	2,373,944	2,771,902

See Annual Parliamentary Papers and Board of Trade Blue Books; A. Bowley, Elements of Statistics, 1901; R. Mayo Smith, Statistics and Economics, 1899; W. A. S. Hewins, Trade in the Balance, 1921; E. Nagoaka, Economics of the Import and Export Trade, 1930; F. Hooper and J. Gruham, Import and Export Trade, 1930; A. Loveday, Britain and World Trade, 1931; J. Richardson, British Economic Foreign Policy, 1936. See also CUSTOMS DUTIES; ECONOMICS; EXCISE: FIRE TRADE: PROTECTION.

Impodence, which may be caused by

Impotence, which may be caused by malformation, by general weakness due to overwork, sexual excesses, old age, anviety, certain discuss such as diabetes, or by an affection of the spinal cord, is a condition of the male generative organs which either temporarily or permanently prevents sexual intercourse. Quack remedies, if not useless, are irritant and harmful, but as a rule an active open-air life and liberal feeding, soxual rest, tonics, and cold baths will effect a curo. Psychiatric treatment will cure anxiety cases. See Marnage.

Impound: (1) To place in a pound goods or cattle distrained for rent due or for viggo Johansen and Kroydamage done respectively. The things impounded are detained until replexied or redecued. A person at whose instance cattle are impounded is liable if the cattle is chiefly represented by be not properly tended while in the pound. (As to pound broach see under BREACH.) (As to pound broach see under BREACH.) (2) Where a judge during a civil trial is of principle in the pound that the evidence discloses the representatives in America.

commission of a criminal offence and orders the documents in the case to be retained and sent to the director of public prosecutions, he is said to I. the documents.

Impressionism, in art, the somewhat vague and indiscriminate name given to a certain type of modern painting which is most strongly represented by the Fr. schools of Edouard Manet on the one hand and Claude Monet on the other. and Claime Monet on the other. The former is purely realistic in its ideals; the latter, for which the name 'luminism,' or, as Camillo Mauclair suggests, 'chroma-tism,' would be more correct, alms at the study of atmospheric effects, the play of light, and similar chromatic values. The term 1. arose through the exhibition of Monet's 'Impressions,' a sunset which aroused particular ridicule at the Salon des Refuses (1863), and four years later a phrase in the catalogue of the exhibition parase in the catalogue of the exhibition of Manet's work estab. it still more firmly. Some, however, think that the term impressionists was first used in 1874 when the first 'impressionist exhibition was held, in Paris, by which time the various tendential the manufacture of the statement of t denctes in the works of the protagonists of I. were, at the moment, fixed into a doc-trine common to most of the group. That doctrine may be said to have received its impulse from Courbet, who revealed a new breadth of handling and an interest in contemporary subjects. His exhibition in 1855 stirred up something little short of panic in the ranks of official Fr. art, since it forced them to realise that all the problems of art were not confined to the familiar struggle of Ingres versus Delacroix, or drawing versus colour, but that a third and more alarming doctrine had arisen: that of Realism. To younger artists like Pissarro, however, Courbet's return to nature and his rejection of conventional subjects opened up exciting new possibilities; and other painters who were deeply influenced by Courbet at this time were Manet, Fantin-Latour and Whistler, though the two latter were afterwards to deny their early nesster It was, however, Whistler who introduced the word into Eug. art-vocabulary by his ex-inlation at the Grosvenor Galleries (1878). Since those days, in the teeth of opposition which is unparalleled in the hist, of art which is unparalleled in the hist of art—except perhaps in the somewhat analogous case of Wagner's music-dramas—the movement has spread over the whole of birrope. The Fr. element is discussed helow in some detail: it will be sufficient to mention the chief foreign representatives: (Ger.) Max Liebermann and kinchl; (Belgian) Van Rysselberghe, Verhevdon, and Heymans; (Swiss) Felix Vallotton; (Dutch) Matthys Marys; (It.) Pietro Fraglacoma, Boldini, Segantini, and Michetti; (Sp.) Zulosga, Francisco Pradilla y Bastida, and Rusinoj; (Dan.) Viggo Johansen and Kroyer; (Swedish) Auders Zorn; (Norwerlan) Fritz Thaulow; (Russian) liya Repin. In Britain, apart (Russian) flya Repin. In Britain, apart from Turner and Constable, the movement is chiefly represented by the Glasgow school, John Lewis Brown, Guthrie, and Lavery; whilst Whistler, Sargent, Harrison, and Mary Cassatt are its

but technically it was no less a revolt against Romanticism also. In technique Watteau, Monticelli, and Delacroix are the chief forcrunners of I as fat as the div of Lorrain Vernet, tones is concerned, Lorrain Vernet, Ruysdael, and Poussin are its progenitors in the matter of landscape treatment and composition the movement was also very strongly influenced by the exhibition

The sources from which I. was evolved the Luxembourg), Renoir, Desboutins, are of the widest. It was in spirit akin to Bazillo, Legros, and Whistler (at that time the Romantic Movement, as a revolt a student). They also found sympathetic against the classical or academic schools, support in Gautit, Baudi life, the form support in Gautier, Bandel die, the Gon courts, Zola, Mallarmé, and other men of letters, at different periods—It is there fore justifiable to regard Manet as the first great painter to lead the revolt of modern art agrinst the as mbolists and Romantics In the realist impressionists as the chief of whom we may name Vanet Courbet Bastin Lepage, and Degas, we find the artistic cuterion of fruth of character – of Jap paintings of Hokusai, Out imato, lecrete crate-substituted for that of be nuts



Druet

MONICH IA GARL ST LAZARF'.

and Hiroshige at the International Exposition in 1867, both as regards its realism (e.g. Manet) and 'luminism' (e.g. Monet) But it might be claimed with no small de gree of truth that I. was chiefly of hing. origin, although it has made its head-quarters in France. According to Wyn ford Dewhurst, 90 per cent of the theory of I was clearly embodied in Ruskin's Fle ments of Drawing And it was from Furner and Constable that Monet, Pissarro, and the others took their chief inspiration, especially in the matter of landscape treatment -the ideal style of subject for impressionist treatment, and the one in which the greatest results have been achieved In the first place I, centred on Manet,

who was virtually the president of a little club that used to meet at the Café Guerbois, in the Quartier Battgnolles, the circle included Monet, Pissarro, Cézanne, Degas, Jongkind, Berthe Morisot, Fantin Latour (whose life-sized painting of a

But this was only one of the ideals of the now att there were two others, respectively the study of the myster; and beauty of light and the study of am pression is the catching and reproduct tion of a nomentary vivid glimpse of a scene, as si posed to the systematic reproduction of the details which are unseen in such glimpses. The impressionists were the first to learn the art of presenting a tout ensemble wherein details were either deleted or subordinated to the summarised effect of the whole A blurred vision of effect of the whole. A blurred vision of things which eneircle a central object on which the gaze is founded as once to othe ally. To a realist painter it is also correct artistically. And not only the focal prin-ciple, but brilliant similght, mist, or per-spective are capable of blurring the de finition of objects. Of the lumnists, i.e. those whose main concern was the study of the mystery and beauty of light, as men tioned above, Monet was the loader, they group of the prin. members now hangs in may be considered as the direct descripdants of Delacroix. Of the other school, Renoir and Degas may be taken as most typical. With Monet and his group, the whole technique of I. is thoroughly investigated for the first time; they estracised the conventional tonality of brown, and the use of all browns, blacks, and ochres; by the majority all palette mixtures were abandoned and only the pure colours of the spectrum, in addition to white, were accepted.

Side by side with the juxtaposition of touches of pure colour are the principles of: (1) The simplification of light and shade in the presentation of mass rather than outline: (2) the investigation of shadow, which is not absence of light, but light of diminished intensity; and (3) the separation of local colour and reaction. By the employment of these means the impressionists succeed in a marvellous degree in the portrayal of motion-the sway of shadow, the passage of light, the heaving movement of water, the sensation of wind. However much of this may be crodited to such painters as Géricault and Fromentin, the combined value of light and of movement in relation to one unother reaches its supreme expression on the canvases of M. (Renoir, Degas, Cézanne, Pissairo, and Sisley). With it we canvases of a Cocanne, Pissarro, and sisley. With it we must also associate the visionaries, or his cocanne for his symbolism. Puvis de Chavannes for his fine decorative freatment, and Currière for psychic insight. The last named, like Whistler, Harrison, and Pointillin, belongs to a distinct school, whose technique dif-fered from that of Monet in so far as, instead of employing the principle of juxtaposition of pure colour, they applied flat tints in a broad style, using not only the pure, radiant prematic colours, but also palette mixtures. It remains only to refer to the method known as 'Pointillism,' whereby the colour is transferred to the canvas in spots instead of m mass, as in the case of the chromatists already discussed. The inception of this method, which is associated rather with the Neo 1, of which Gaugum, Deals, and Van Hysselberghe are the leaders, is attributed to M. Henry, who conceived the aesthetic expression of the newly discovered scientific theories on colour-waves and spectral analysis in the works of Helmholtz and Chevreul about 1880. The idea concerned itself especially with complementary colours and the reaction of tones. Its chief practical application is ascribed to Georges Seurat. an Gogh also used this technique, and Van Rysselberghe employs it constantly But the method is obviously alien to the spirit of art: it is charmless, devoid of character, too purely theoretical and removed from inspiration.

The tirst success of 1. was the exhibition of Manet in 1884, consisting of some forty of Manet in 1603, tand ten years after the first public sale, when such frantic hostility was shown that it was necessary to organise police precentions! In 1897 organise police precantions! In 1897 the collection of Calilebotte, a wealthy amateur who had befriended I. from the outset and had even gained some small notorioty for his own work, was accepted

with reluctance and after considerable hesitation by the Ministry of Fine Arts and exhibited in the Luxembourg. The same year at the Vever sale, and two years later at the Choquet sale, the once despised canvases changed hands for enormous sums. Manet's portrait of Monet in his studio, for instance, which realised about 150 francs in 1884, went for 10,000 francs, while at the Pellerin, Paris, in 1910, even greater prices were offered. See C. Mauchir. French Impressionists, 1904; Maliciair. French Impressionism, 1904; W. Dewhurst, Impressionist Painting, 1904, with bibliography; C. Marriot, Modern Morements in Painting, 1920; F. Rutter, Evolution in Modern Art, 1926; W. Uhde, Die Impressionisten, 1937; J. Rewald, The History of Impressionism, 1947.

Impressionism in Music.—Term applied sures on loss lossely to composer (especi-

more or less loosely, to composers (especially Fr.) contemporary with the school of impressionist painters. Debussy, although he disapproved, was designated as the leader of musical I. One of the chief aims of I. is to interpret artistically a momentary glimpse of things rather than their permanent state.

Impressment, act of forcibly taking persons or goods for the public service; but generally restricted to the work of press-gangs in compelling persons to serve as soldiers or sailors in time of war. I. of salors differed from that of soldiers, It was regarded as a prerogative right of the crown, given by the common law and recognised by statute. This is espiamed by constitutional historians by the fact that the feudal tenure of land made provision for land but not for sea service. 1. of soldiers was declared illegal by the Long Parliament of 1641, but was occasionally resorted to subsequently, c.g. during the Amer. War of Inco pendence, under special parl, authority. 1. of soldiers is to be distinguished to a conscription, which, although also a statement, applies to all ablebodied persons alike. It may be observed here that during the Boer war of 1909 the f. of goods was commonly known by the term 'communication'. commandeering.

Imprisonment, see under PRISONS, Impropriation, the grant of a benefice or parsonage to a layman cr lay corpora-tion as opposed to 'appropriation,' or the annexing of a benchee to the proper and perpetual use of some religious body politic. The terms have, however, been used synonymously both in text books and in statutes. Both terms imply the endowment of vicarages consequent on the rise of par, churches by the consent of the bishop, who alone had the care of souls in his diocese, together with the title to all cecles, revenues. But as the practices of appropriation and i. originally prevailed, there was an essential difference; for a layman, not having care of souls, applied the temporalities of the benefice to his own uso. Before the Reformation appropration and f. prevailed extensively, the monasteries furnishing the most numer-ous examples of the religious corporations that obtained grants of benefices. After the suppression of monasteries the crown was vested with all such rights as related

to the grant of benefices; but the crown from the pope, from bishops for their freely transferred its rights to laymen, diocese, or higher superiors of religious In practice the spiritual duties of rectories, orders for their subjects may or can absolve the tithes or whole property of which have descended to laymen, are always discharged by a vicar (Lat. vicarius, delegated), who receives a certain portion of the enoluments of the living (see GLEBE LAND). See Phillimore's Ecclesiastical LAND). See Phillimore's E. Law: Blackstone's Comments.

Improvisatori, or Improvisation, the art of composing verses, whether accompanied by music or not, on the spot without preparation, and on subjects suddenly proposed. It is distinctly It. in origin, though the Provencel troubadours, in spite of the claborate versification of their poems, are credited with the power. Silvio Antonio (1540-1603) was said to have been made a cardinal because of his skill in composing verses on any subject; Perfetti (1681-1717), to the accompaniment of a guitar, astonished the whole of Italy by his skill. He was crowned with laurel by Pope Benedict XIII. Corilla Olimpica, Madame de Stael's Corinno, was also crowned. Outside Italy, the Swedish poet, K. M. Bellman (1740-95), the Fr. Joseph Méry (1798-1865), and the Eng. humorist, Theodore Hook (1788-1811) may be mentioned. The art is practised to-day which it is practised to-day. tioned. The art is practised to-day chiefly in music-hall and cabaret enter-tainments. Many of the great musiclans and instrumentalists have exhibited their power of improvisation. See A. Vitagliano, Storia della poesia estemporeanes nelle lettere italiane, 1905; E. Ferand, Die Improvisation in der Musik, 1938.

Imputation, attribution to another of some quality or character, especially of a charge of guilt. The term is used technically in theology of the attribution to all faithful believers in Christ of His stablements and the characters are characters. rightcousness, by Mearions substitution of man's sin to Him, and of Adam's sin and its consequences to all mankind as Adam's descendants. The term thus plays a part in the doctrines of original sin, of predestination, and especially of the orthodox view of the Atonement (q.v.).

Imros, see IMBROS.

Ina, or Ine, king of the W. Saxons, or Wessex, succeeded Ceadwalla in 688. He forced compensation for the death of Ceadwalla's brother from Kent in 691, conquered Geraint of W. Wales in 710, fought in Wiltshire against the Mercians, and in 725 crushed a revolt of the S. Saxons. He drew up a still extant code of laws for Wessex, and having abdirated in 726, and retired to Rome where he died, the date not being known. He is said to have built Glastonbury.

Inaccessible Islands, see TRI-TAN DA

CUNHA.

Inagua, Great and Little, two is. in the magus, creat and Lattie, two is, in the archipelago of the Bahamas in the Brit. W. Indies, situated at the southern end of the group. Great Inagua has an area of 530 sq. m. and contains salt ponds. Pop. under 2000.

Inari, Lake, see ENARE.
In Articulo Mortis (literally, at the point of death). In the Rom. Catholic Church

penitents from their sins. But a simple priest, even if degraded or apostate, can absolve any penitent in articulo vel periculo mortis in all cases, including those of grievous sins which are ordinarily reserved for absolution by some eccles, superior, like the ordinary of a diocese. As to the As to the admissibility in evidence of the declaration of a deceased person relative to the cause of his death, see under DECLARATIONS OF DECEASED PERSONS.

Inca, tn. in the Balcaric Islands in the Mediterranean, 17 m. E.N.E. of Palma, Majorca, belonging to Spain. Oil, whee, and almonds are its chief products, and algives its name to one of the five judicial dists, into which the is, are divided for the purpose of administration. Pop. 9400.

Incandescence, the term applied to the state of bodies when they give out light through being highly heated and yet are not undergoing chemical change. It is usually associated with solids, although the oxy-hydrogen flame is an example of its appearance in gases. See Gas and

ELECTRIC LAMPS.

Incandescent Light is produced when a 'mantle,' consisting of a conical hollow gauze of certain metallic oxides, is placed in a hot but non-luminous flame produced by a burner of the Bunsen type. bach was the first to substitute certain metallic oxides for carbon as the incandes-cent body. The 'mantle' is made by impregnating a cotton or ramic' stocking' with a solution of various salts, the usual mixture being 99 parts thorium nitrate and I part cerium nitrate. On ignition a skeleton of the oxides of the metals remains, giving out a brilliant light by virtue of its incandescence.

Incandescent Lighting, see under Electric Lamb and Electric Lighting.

Incantation (Lat. incuntatio, from incantare, to enchant; from in , cantare, to sing repeatedly), the use of a set form of words, spoken or sung, to produce a magical and preternatural effect. The use of the word incanture in Lat. is very early, for it appears in a passage quoted by Pliny from the Twelve Tables, and from it is derived, through the Fr., our word 'enchant.' It is almost certain that the use of magic spells must be traced to an Akkadam source, for many anct. ex-amples of Babylonian and Assyrian formule have been discovered. An interesting sidelight on the important position which the Magi or magicians, generally Chaldeans, held at an E. court, is given in the Book of Paniel. Ultimately we are told that Paniel binself became their head. An almost unbounded power was attributed in anct. times to the power of magic rimes, to which the gods and the powers of nature were believed to be subject. Many of these could be used by any individual, but others were the prop-erty of the priest or magician, whose influin Articulo Mortis (literally, at the point ence was due to his supposed power for of death). In the Rom. Catholic Church good or evil. In Christian times, the use only priests who have received jurisdiction of Is. has by no means ceased, even in the

countries commonly named Christian. It is the spiritual courts took cognisance of can easily be traced through the centuries. In the Middle Ages the sucred coremonies and rites of the Church were often con-ceived of by the ignorant as charms. An allusion to the use of the first fourteen verses of St. John's Gospel as a kind of incantation is given in Chancer's Prologue in the lines on the Friar beginning plesaunte was his In Principio' Many of the old nursery rhymes now dying out were formerly used as incantations against rain and the powers of nature Lenormant, Chaldean Magic (trans., 1878); L. F. Maury, La Magic et l'Astrologic (1th ed.), 1877; Sir J. G. Frazer, The Golden Bough, 1900.

Incarnation (from Lat. incarnari, to be made flesh; from in + care, flesh), in Christian theology, the act by which the Second Person of the Blessed Trinity assumed human form and human nature. In many other religions, and especially in those of India, there are accounts of the taking of human flesh by the gods in order to seenre a fuller revelation to the world; but these differ essentially from the orthoox Christian belief in the L. of Jesus Christ, which lays stress on the fact that the Logos, eterman divine, then became also essentially human, so that Christ was perfect God and perfect Man; one not by conversion of the Godhead into desh, and the layer the membered into God. by conversion of the Godfield into flosh, but by taking of the manhood into God.' See R. Wilberforce, Doctrine of the Invariation, 1882; J. Orr, Christian View of God and the World, 1893; J. Gore, Bampton Lectures, 1891; J. Eck, Incarnation, 1902; C. Lattey, The Inva. nation, 1926; A. E. Rawlinson, Essays on the Trinity and the Incarnation, 1926. and the Incornation, 1928. Incas of Peru, see PERU.

Ince-in-Makerfield in, and urb. dist., Lancashire, England, in part div of Ince. It stands on the Leeds and Liverpool Canal, I m. S.E. of Wigan. It has Canal, 1 m. S.E. of Wigan. It has collieries, iron and waggon works, cotton Pop. 19,700. mills, etc.

Incondiarism, see Auson.

Incense (Lat. incensum, from incendere, to birn), perfume arising from the fumi-gation of resins, gums, balsams, etc., used in public worship from a very early date, and prevailing in many anet, religious; but its use was not generally adopted in the christian church till the sixth century, in the time of Gregory the Great. is no regular tormula for the preparation, but the ingredients, after having been well mingled, are placed in the conser or thurible and sprinkled over the hot charcoal contained therein, when they at once become volatilised, and diffuse their odour through the building. In the Catholic Church, I. is chiefly used in the oncharistic sacrifice and Benediction (q.c.). 1. has symbolic significance of zeal, virtue. and the ascent of prayer to God. In the last half-century its use was abolished in the Reference churches, but has been restored to a certain extent in the Anglican communion.

Incest, sexual intercourse between persons prohibited from marrying by reason of kinship or affinity. Formerly I, was

the offence. But by the incest Act, 1908, intercourse by a male with his grand-daughter, daughter, sister, or mother, is a muchable with negal misdemeanour punishable with penal servitude. Consent of the female is no defence, and a consenting female is liable to the same punishment. 'Brother' and sister' as used in the Act include half 'sister' as used in the Act include half brother and half-sister. No prosecution may take place without the sanction of the Attorney-General. The Act does not extend to Scotland, because I. was already a crime in Scots law. Although marriage with a deceased wife's sister is now Lawful (see Deceased Wife's sister is now Lawful (see Deceased Wife's sister will enable a wife to obtain a divorce on the ground of nucestnous adultery. In the ground of nicestnous adultery. primitive tribes the prohibition of con-sauguncous marriages is a slow development. Sir James Frazer, in dealing with totemsm in relation to exogamy, is too prone to dogmatise on the origin of the aversion to incestuous unions. Whether that aversion sprang from religious or Whether merely ethical sentiments, or from a perception of disastrous effects on racial development, is a question the answer to which depends mainly on conjecture. See which depends mainly on conjecture, so, L. H. Morgan, Ameient Society, 1877; Sir J. G. Frazer, Tolemism, 1887; and H. Spencer on 'Punaluan Groups,' in the Pracciples of Sociology, 1910. Inch, from the Gaelic word innis, mean-

men, from the casene were arms, meaning a small is, or a land by a riv., found in the geographical names of Scotland and Ireland. It is also used locally of a meadow by a riv., as the 'Inches of Perth,' and sometimes in the sense of rising ground in the midst of a plain.

Inchbald, Elizabeth inte Simpson) (1753-1821), knr. actress, married at the age of nmeteen Joseph Inchbald, an actor. She was now able to fulfil her desire and go on the stage. She made her debut in the provs. as Cordelia to her husband's Until bis death in 1779, they touted the country; but then she secured an engagement in London, where she remained until her retirement in 1789. She never achieved any great fame as an actre-s. Mrs Inchbald began writing plays at in early uge, but the arst piece that was produced was The Mogal Tale, at the Haymarket in 1781. In all, she wrote or adapted some twenty plays, but none met with any great success. Better known than these is her romance A Simple Tale (1791), which attracted much attention. and is her best work. In 1806 she began to edit The British Theatre, in twenty-five vols, and this is a collection of considerable value to students of the drama. a biography of 1, by James Boaden (1833).

Incheaps Rock, see BELL ROCK. Inchealm, or Island of Columbs, in the with of Forth, forming part of the par, of Aberdour, Frieshire, Scotland. It con-tains a fine Augustinian momentary found-ed in 1123 by Alexander I.; the church, chapter house, refuctory, cloisters, and a square tower being still preserved. There of kinship or affinity. Formerly I, was is also an anet, stoneroofed oratory, supnot a crime by Eng. law, except in so far posed to have been a hermit's cell. From

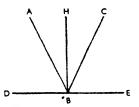
the is the earls of Murray take their title of Lord at Colme (1611)

Inchgarvie, rocky islet in the firth of Forth off the coast of kifeshire, Scotland It possessed at one time a fine old castle that was used as a state prison, but the ruins were cleared in order to build one of the piers of the Lorth Bridge It is included in the royal burgh of Inverkeithing

Inohketh, is in the firth of Forth, forming part of the par of kinghorn, in Fifeshire, scotland It is a barren rock and has now become gov property and a fine lighthouse has been built which can be seen for a distance of 21 m. Henry VIII fatified it after the battle of Pinkie, hat in 1519 it was recaptured by the scottish and Fr troops. In 1881 forts were built on the different headlands and

finical up by military roads Inchmahoms (the lale of Rest) is in the I ake of Meaterth, in Peritshire Scot land. It contains the runs of an Early land It contains the ruins of an raily leng August man priory built in 1238 by Walter (on vi and do seesang a fine Wildown Wer is said to have doorway Queen Wer is said to have been to the length of the seesang and the see spent some months on the 18 when a child before going to Fran e (1-48)

Incidence, Angle of, tern used for the angle made by the direction of a disturb ance impirging in the surface of a medium with the normal to the surface



CBH I and ABH is the angle of it of reflection.

inclination of one line to another which meets it but is not in the sime straight line, is buchd's definition of in angle

Inclination, etc. DIP
Inclined Plane, rigid pline inclined at an angle to the horizon Iti incehanical in-trument u ed to facilitate the lifting of be to bother to the case of an in line of 1 in 6 a power of 1 lb will support a weight of 6 lb thus giving the hanical advantag or 6

Inclosures, se COMMONS IND ENCIO

In Cona Domini, papal bull the com in Gena Domini, papal buil the coin menting words of which were. In Coina Domini, formerly issued every year in Holy Week. Its object was to publish the papal consure of all hereards whisms, and infractions of papal privileges, and various temporal crimes. It was first pub in 1361 and was only discontinued in 1770, when the Pope yielded to the opposition of the European kings who objected to the bull as a limitation of their sovereign. to the bull as a limitation of their sovereign authority.

Income Tax, tax on income from what-soever source derived graduated accord-ing to the amount of income and with a diffcientiation in certain cases between carned and uncarned meome. The I I as a general tax on property and employ ments was first imposed by Pitt in 1799 as a war tax. It was a tempolary impose tion on income itom land, personal property trades professions offices, pensions, strends and employments, and also upon incomes arising out of Great But in ind was griduated on all incomes ranging from 460 to £200 a year, with a tax of 10 per cent on incomes above £200 When the war with I rance broke out again in 1803, Addington is imposed the tax at the rate of 5 per cent on incomes of 4150 a year and over But the Income Inx Act of 1803 did not require a general return of income from all source as had the Act of 1799 but only puthenlar returns of income from puthenlar sources. In 1805 Pitt, having returned to power, continued the tax, and added one fourth to all the rutes after the death of Pitt augmented the rate to 10 per cint and from that year the tax was ontinued and increased from time to time until its abrogation in 1515 in these earlier lets there was some principle of differentiation eg in the Act of 1806 the exemption of incomes not over t 0 was only allowed where the income was drived from labour viz from pro-fessions treus and offices. The prinfessions treus and offices ciple of exemption by way of allowance for children was adopted in the cirliest Act, but discontinued in 1800. In the first but discontinued in 1800. In the first year of its imposition the L. L. pr. duced over at 000 000. In 1815. 414 320 000 Regarded of first and oven now in theory as essentially a war tax, it was not revived again until beel for merely fiscal purposes m 1812 imposed it at the rate of 7d in the round or about 3 per cent adopting in his act the groundwork of the Act of 1800 But the limit of exemption rose to the and was mad are pective of the incle of derivation Faitners were taxed on a lower estimate of their profits and giswith and tailway companies were brought in Although in 1842 it was im posed for three years only, it has been confinued ever since and has now definitely lost all semblance of a temporary war tax Glalstone in 1853 extended its operation to Ir land and so made it universil in the kmgdom The principal change has been the demogratic one of granting relief in respect of carned mediae in to \$2000. and imporment super tax on incomes over £ 000

the provision; relating to the rate, colliction and assessment of the I T inn clistely prior to the changes intro-duced by the Finance Act of 1909 will be conducte to a clearer appreciation of those changes, and may be summarised. For the most part the provisions as to administration and incidence have undergone no alteration. It was divided into five schedules according to the different sources of income Schedule A formed the charge on the owners of land and houses It on the benefit arising out of the use of occupation of land, which benefit was measured by a proportion of the rent or an. value; C related to income from any public revenue, imperial, colonial, or foreign; D, income from professions, trades, and other occupations, together with all such incomes as were not included in any of the other schedules; and E was a charge on persons employed by the state or engaged in any other office of profit in a public corporation or company. Incomes not exceeding £160 were totally exempt; real property exempt included public parks and recreation grounds, prisons, public offices, or other crown property, and canals, mines, quarries, etc., from which no income or benefit is derived beyond the general profits of the concern to which they belong. Other exemptions were incomes from property held on trust for charitable purposes in so far as applied to such purposes, the stock dividends or other income of friendly societies (q.r.), and of industrial and provident societies (see under Friendly Societies). Incomes of individuals not exceeding \$100 were allowed an abatement of £160; not exceeding \$500, of \$150; not exceeding \$500, of \$120; and not exceeding \$700, of \$70. An all columns for premiums for life assurance, not exceeding one-sixth of the income, was also allowed. The relief to 'earned' incomes was a reduction of 3d. in the pound upon the rate paid on uncarned incomes. The general rate was 1s. in the pound, and 9d. in the case of carned incomes not exerciting \$2000. The tax was granted for a year only, but annually renewed. The axessment and collection of the tax was entrusted for the most part to local commissioners, known as general or dist. commissioners, appointed by the Land Tax Commissioners out of their own bods. and not in any way subject to the control of the gov. These commissioners received no remnueration, although exempted from parachal offices and jury service. Their duties consist in signing and allowing I. T. assessments, and hearing appeals. They also appoint local graviting relief in I. T. in favour of carned officers for I. T. purposes. There are also a moone as compared with investment inspecial salaried commissioners appointed by the crown to make assessments under Schedule C, and, where the tax-payer elects, under Schedule D; also to assessatively companies and dividends out of foreign and colonial stocks, lunds, or other revenues. Special commissioners may hear appeals from their own or the assessments of local commissioners. The assessments of the salaries under Schedule E are made by the commissioners for public offices. The duty of a collector is to obtain payment of the I. T. from the persons on whom it is imposed, and for this purpose he is supplied with warrants to enforce payment. As indicated above, must of these provisions are re-enacted annually, and to ensure collections in due time these provisions and all enactments income is made by deducting one-sixth relating to I. T., not specifically repealed, have full force as soon as the tax is granted in any Finance Act (see Section 18 (2) of the Finance Act, 1907). A Select Comtitive of the amount of the total income, unittee was appointed in 1906 to inquire but must not exceed £250 for any one

into the question of graduating the I. T., and recommended a partial graduation by an extension of the existing system of abatements, even up to incomes of £1000 or more. They also recommended graduation by a super-tax, and a differentiation between carned and uncurned incomes, to be limited to incomes not exceeding 23000 a vear. Some of these recommendations found expression in the Finance Act, 1909–10.

The f. T. year is from April 6 to the following April 5. The standard rates of 1. f. between 1812 43 to 1854–55 was 7d...

in 1555 56, 19, 2d.; 1856-58, 18, 4d.; it was then below 1s, until 1900-01, when it rose to 1s.; in 1915 16 it was 3s.; 1916-17 and 1917 18 it rose to 5s., and thereafter was as follows: 1914-19 to 1921 22, 6s.; and ranged between 4s. in 1920 26 to 7s. in 1939-40; 8s. 6d. in 1940 41, 10s. in 1941-12 to 1944 16, and was reduced to 9s. in 1946 47.
The Sur-Tax replaced the super-Tax,

which was levied up to and including the Super-Tax year 1925 29. The Sur-Tax is in effect a deferred in-talment of I. T. payable on Jan. I after the end of the I. T. vear. Sur-Tax is at the following rates: m respect of the first £2000 rd; tax chargeable on every t of meome .

2.001 to 2,501 to 2,500 2. 0d. 24. 6d. 5. 6d. 3,000 3.001 to 1,000 1,001 to 5,001 to 5,000 6,000 14. 6d. 55. Gd. 6,001 to 3.00 J lis. hd. 8,601 to 10,000 10,001 to 15,000 78. vd. 84. 64. 12,001 to 15,000 98. 6d. 15,001 to 20,000 10s, 0d.

In the Finance Act, 1940, power was given to reduce the basic figure for Sur-Tax purposes to \$1500; but no action has been taken under the Act, and \$2000 remains the basic figure.

come. Abatement was also granted in respect of the number of members in the tay payer's family.

The terms 'assessable' and 'taxable' as applied to incomes were employed for the ust time in relation to L.T. 'Assessable income,' in the case of carned income, means the amount of such meeme as computed for I. T. purposes, after deducting the amount of the 'e irned' income allowance, and in the case of other income, the actual amount of such income acomputed for I. T. purposes. 'Taxable Income' means that part of the 'assessable income' upon which I. T. is actually charged, i.e. the 'assessable income' loss the various deductions by way of relief.

The differentiation in favour of 'earned'

individual. An allowance is also made of one-eighth of the uncarned income of persons of the ago of 65 years and upwards whose total income does not exceed 2500. This allowance is granted, in the case of a married couple, whether either the husband or his wife, living with him, has reached the age of 65 at the com-mensement of the year of assessment, but

the joint total income must in such a case fall within the prescribed limits.

Deductions from assessable income in

order to arrive at taxable income. - Exemption from tax may be claimed where the total as essable income does not exceed \$120. Where the taxpayer is not totally exempt, the following are the deductions that may be claimed from the total assessable income in order to arrive at the taxable income and these deductions may be claimed irrespective of the amount of the taxpayer's total income: Personal Allowance may be claimed of £110, or, in the case of an individual whose wife is living with him, £180; If ife's Earned Income: when a taxpayer's total income includes earned income of his wife, the personal allowance of £180 is increased by a sum equal to seven-eighths of the amount of such carned income, subject to a maximum additional allowance of £110; Deduction for Children: a deduction of £60 may be claimed in respect of each child, step-child, or adopted child under the age of 16 or who, if over 16, is receiving full-time instruction at any univ. college, chool, or other educational estab. A claim may also be made in respect of children employed in a trade provided the pay (excluding problems returned) is not over \$13 a year. These deductions are not allowable in respect of children enjoying in their own right incomes exceeding £60 There are also other reliefs in the shape of deductions, in respect of dependent relatives and of wildowed mothers taking charge of children, and in respect of dependent relatives denied unemployment allowance. Allowances may be claimed also on the amount of premiums paid for Life Insurance of the taxpayer or his wife, or in respect of contracts for Deferred Annuties: this relief or allowance is deducted from the amount of tax and calculated at the following rates: one-half the standard rate in the pound on the amount of the premium paid on policies taken out before the above date, a deduction of tax at one-half the standard rate in the pound is allowed on the prominms paid by a claimant whose income does not exceed £1000, at 5s. 3d. in the pound where his income exceeds £1000 and does not exceed £2000, and at 7s. in the pound where his mcome exceeds £2000. All contributions to national insurance, whether paid by employer or employees, are allowed as a deduction from income and not us for insurance premiums.

and not as for insurance premiums,

Post-War Credits.—The large increase in the rate of 1. T. during the Second World War was to some extent mitigated by the proposal (see White Paper entitled Financial Statement (1941-42) S.O. 73) to treat the additional tax payable by each individual taxpayer in respect of the re-

ductions in earned income allowance and ductions in earnest income anomance and the personal allowances a credit to be made available to him after the war. The total cost of post-war credits at the end of the financial year 1945–48 was \$600,000,000. Credits were repaid in 1946 to taxpayers over 65 years of ago.

With respect to Dominion I. T. relief is granted to a person who has paid or is liable to pay United Kingdom I. T. on any part of his income and who proves that he has paid Dominion I. T. for the same year in respect of the same part of his

income.

Perhaps the greatest change which has occurred since the First World War in relation to I. T. is the abolition of the three years' average in the case of assessments of profits of businesses, professions, etc., under schedule D and the substitution of an Assessment on the profits of the preceding year (Finance Act, 1926). By the Finance Act, 1922, certain revocable trusts are assumed by the crown as formed for the purpose of avoiding tax, and provision is made that all income arising in these cases is to be regarded in finance purposes as income of the person who has the power to obtain its enjoyment or the maker of the trust, etc. Finance Act, 1936, also made provision for the prevention of the avoidance of I. T. by trusts and other devices. There are many exceptions to the law made in favour of charities, the general effect of which is that money used or earned directly in connection with charities is free of tax. In respect of the general principles of taxation in so far as they relate to 1. T. the decisions of the Courts have estab. that (1) tax is in respect of income, (2) accretions to cap, are not to be taxed, (3) deductions from income in respect of losses of cap. are not admitted, (1) profits from changing the character of property otherwise than in pursuance of a systematic scheme of profit getting are not chargeable in respect of income, (5) gifts and voluntary allowances or payments are not taxable as income of the recipient, (6) the law leaus in favour of the subject. but hardship is no answer to a claim for tax.

It is interesting to compare the amounts paid in I. T. before the First World War with those paid after that war, and equally instructive to compare these figures with those for the years of the Second World War and after. In 1911-12 the total recepts in the U.K. were £11,315,655, while in 1929-30 the total recepts were while in 1929-30 the total receipts were 2293,816,000 (inclusive of £56,390,000 super tax and surtax). In 1937-38 the total net receipts were £297,861,548; in 1938-39, £336,052,321; in 1939-40, £391,592,899; in 1910-41, £530,765,156; in 1941-42, £775,165,319; in 1912-43, £1,007,312,463; in 1943-44, £1,182,27,889; in 1944-45, £1,361,346,000; in 1947-48, £1,189,728,000; in 1948-49, (estimated), £1,490,000,000. These figures should not be taken as indicating a great increase in national prosperity, but as indicative of the burden laid upon the subject in the form of taxation.

subject in the form of taxation.

With regard to the other countries of Europe, it may safely be asserted that I T. forms a ready but in popular means of raising revenue and in general the

or raising revenue and in general the same broad principles not laid down as in I ngland, viz graduated systems with an initial rebate and alloyances for families. The endeavour to impose an I. T in the U.S.A. in the past met with fluctuating success. As in Ingland, it began as ing success As in 1 ngiand, it began on a war tax when it was imposed by the I ederal Goy, which during the Civil war levied a tax of 3 per cent on all incomes over \$400. It was not altrogated till 1872 but when revived in 1895 the courts declared it to be unconstitutional with the result that the constitution had to be amended to vest in Congress the necessary

authority to impose the tax

On Leb 25, 111, the XVI Amendment of the U.S.A. constitution was declared in force—It stitles that (ongress should have power to kyy and collect taxes on in comes from whatever some derived with out apportionment among the sev states and without regard to any census or counterstron. This amendment was 1st fied by all states except connectius I louida. Pennst) mix Rhode Island Itah and Visitus. Ethe Annual Reports of the commissioners of Inlaud Icereuse. Dowell Income Tax Isus 1871 and History of Laration in Ingland 1884. R. I. It., Laration in Income states and Cities, 1885, Sir R. Pilgrave, Duttonary of Political Leonomy, 1894. 1905. A. C. Piqua Applied Leonomics 1923. E. D. River Introduction to Income Tax, 1911. Wilson and Hudion on the This amendment was rati enumeration Tax, 1931 Wilson and Hailon on the Income Iax 1ct 1945, It and A 1d wards, Supplement to Murray and Carler & Guide to Income Lax Practice 1945, RA Butler, Income las for I veryman, 1945 43

Incommensurable, see (ONNI NEL RABII Incorporated Law Society, society of solicitors estab in 152) to exercise a general control over the interests of Any solicitor practising in Folicitor 4 Great Britain, or who has ceased to prictise, is eligible to membership. The society examines students for all the soli citors' examinations, and makes arrange ments for lectures. It is authorised by statute to inquire into all cases of alleged misconduct on the part of solicitors, and to apport the result of its inquiry to the High Court, the High Court may in its discretion either strike the name of the offending solicitor off the rolls or suspend him from practice. In cases of suspected criminal offences by solicitors the society may report to the Public Prosecutor society has a building in Chancery Lane, London, and a splended library

Incorporeal Chattels and Hereditaments. Incorporcal chattels are the rights or interests incident to personal property. intoiests incut in the patent property of copyrights, patent tights, cash at a bank gos stocks, debentures of companies. Such property is said to be incorporeal because it has only a notional existence as opposed to corporeal chattels, or those having a physical exist-ence. Incorporeal hereditaments are rights over or in connection with the enjoy-

immediate or future possession of the land itself, eg rights of way, advowsons (right of presentation to a vacant living), rents, commonable rights (see COMMON. RIGHT OF) I ornicily the term incorpored hereditament included future estates or interests in land or the right to the future possession by way of reversion of icina need (see I staff, Grant) such of icini nece (see 1 starf, Grant) such memorporcal hereint when said to 'he in grant' (by deed) while corporcal lay in livery ? c' it tusfer of possession was neces u., che tusily to pass them to another As both incorporcal chittels and heredit ments now pass by deed, the distinction between their has no particle all proproces.

procted injortance
Increment Value Duty was introduced
by Mr. I lovd George as Chancellor of the I vehequer in his famous budget of 1909 th auty miposed by the Finance Act of that year was one pound for every five pounds of 'increment value' accoung to luil en (1) sale or lesse (for a period execeding 14 years) (2) Succession (upon death of the owner) (3) Valuation to be notice every infreenth year in a spect of land every infreenth year in a spect of lind held by permanent corporations

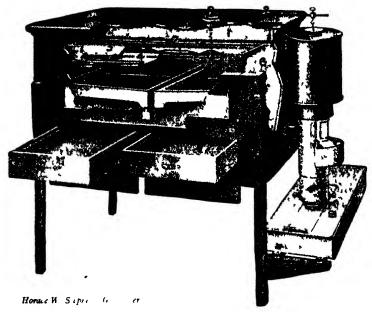
The Act provided that increment value

with amount by which the site value control had the original site value for commissioners of Inland Revenue were made responsible for valuing all 1 nd m the UK, having regard to (1) site value and (2) total value. "Site value was delived as the value of the bare land with it buildings, etc. (these latter being included in the total value) and 'original site value,' as the value of such land on April 0 1909. Agric land was exempt f i the duty so long as its value did not ex end the market value for agric pur the duty a sea failure V iluation I he duty was a failure Valuation was a long, costly, and inquisitive process and the actual return from the tax proved disar pointing The Linance Act of 1920 abelished the duty

Incubation and Incubators from Lat muhire, to brood incumber to he on ci within). I is strictly the a fon of a bud in sitting on her eggs to had h them but the term is also und of the develop n nt of the germs of disease within the the artificial machines (incubators) om it ved in hatching (rgs artificially, or fr similar purpo is in bacteriological lalectiones. In nature I is often the tisk of the femals only, but sometimes the male takes his share as in the case of ostriches and most passerine and run ning birds. In other cases, again, the the high temp thus afforded making broding unnecessiry. The period of in abation varies considerably in length from three weeks with ravens and common fewls, to six or seven with swans and ostil lies, and two weeks or less with swillows. The hallt of brooding over their young is not infrequently found in other creatures as well as in blids, for ex ample, in earwies, centipodes (Scolo pendra), and pythons

Artificial incubation was known from ment of land, as opposed to the right on the earliest times, and practised among huge egg-ovens, types of which are in use by punitive people to the present day. Commercial manuf of incubators began about 1900 and the only machine then made was a hot water type. This in ubater consisted of a double walled abinet with insulation or dead air space between the walls. The interior of the in-

the Chinese and Egyptians by means of whole with hot water pipes running from hure egg-eyens, types of which are in use an authracite boiler. Each compartment could be operated independently but the chief disadvantage to this type of machine was the amount of space nocessary for easy operation. This, together with the amount of labour involved, gradually led to them becoming obsolete



LGG INCUBATOR

1,52) tantial depth of pack typic verting loss of heat 2 py thich cold its fresh wirm air into some nor of incubator 3 heat rath terrand diffuser 1 1 3 to display in over the expension for this dark ragnus removal 5 insule regulator for 1 to ring in contemporature. Cothick feeking which in does up the 1 k and from the contemporature of the k sicking, which makes up th newly-hatch left k t

placed in the top of the c bird and this developed which proved a great improve-water was passed from in our de boller ment in a my ways. This was the hot which in turn was heated in an oil lamp, all machine. In this type, are is heated in

The live st incubator of the type held prox rately 100 hen eggs. Regulation approx nately 100 hen eggs of the to be was obtained by a thermostate apsule filled with other or methylated spirit or a mixture of same This can the typended when haded and the action of the expan ion was used to work either a damper or slide to control entry of the heat into the machine or to allow excess hot air to except from the egg compartment. In order to meet the demands of large poultry keepers who wished to neubate hundreds of eggs at a egg compartment. In order to need the eggs in small units demands of large poultry keepers who wished to neubate inndreds of eggs at a dustry and the exting up of large comtinue, this type of markine was later developed by placing sev of these compartments in long rows and heating the eggs, that would take up little space and

a heating compartment and passed through the machine in metal paper through the minime in tractal pipes. The heating unit can be arranged to work in conjunction with oil lamps, electric heaters or gas burners. This type of me line usually proved to be more sensitive than the hot water model and easier. to work—these incubators are used ex-tensively by pedigree breeders and all poultry farmers who prefer to hatch their

be practically automatic in operation. This need was met by the invention of the Cabinet incubator in the U.S.A. It was later developed and improved in this country and today the Cabinet incubator is a precision built appliance that is practically fool proof.

Usually it consists of a double walled chamber built of selected timber and divided into two compartments. In the setting compartment the trays are so fitted that they can be tilted by some outside medium. In the hatching compartment they are placed at the same level as no turning of eggs is necessary after the nineteenth day. These compartments are heated by electric elements or hot water pipes or a combination of both. The air is circulated by means of a fan which ensures even temp, through the whole of the compartment. This fen can be driven by small electric motors or petrol engines.
The largest Cabinet incubators accom-

modate up to 50,000 eggs in a space little more than 1,000 cubic feet. The temp. and humidity is automatically controlled and when required, the eggs can be autoresent intervals. matically turned present intervals.

Alarm and safety devices are fitted to ensure freedom from breakdown with consequent loss of eggs. These incubators are now used extensively in all parts of the

world.

Artificial I, has the following advantages over the natural process: (1) a much larger over the natural process; (1) a initial larger number of eggs are able to be successfully hatched; (2) the chickens are free from vermin; (3) they are free from the danger of being trodden to death by the hon. Game-keepers use 1. largely for rearing pheasants, and, of course, on large rearing phesonics, and, of course, of target poultry-farms they are indispensable. Various forms of foster-mothers, arti-ficially warmed by lamps or hot water, have also been contrived in which the chickens can be successfully reared after there are bottched. In due courses they are they are hatched. In due course they are moved to cold brooders, and finally to poultryhouses.

Bacteriological I. differ from those for birds in that the heating surface generally surrounds all sides of the L. chamber, and there is usually no special apparatus for keeping the air moist. There are various forms, some hoated by warm water, others by warm air. They are mostly square or rectangular in shape, but some bacterio-

logists prefer cylindrical forms.

Human I, have also been designed for by two Ger, printers, sweynheym and rearing children too weak to survive under | Panuartz, who set up a press at the man isordinary conditions. The first was that of lp. Tarnier (1880), used in Paris, and an improvement was made in Heer-on's, which is used at various hospitals and

institutions throughout Great Britain.

See T. Christy, jun., Hydro-Incubation:
L. Wright, The Book of Poultry, 1911; J. H. L. Wright, the Book of Fourty, 1811; S. H. Sutcliffe, Incubators and their Management: H. H. Stoddard, The New Egg Farm. For becteriological I., see catalogues of Hearson of London; Cambridge Scientific Instrument Co., Cambridge;

signify 'diligent residence,' or 'assiduous application to duties.' In eccles, law it includes such rectors, vicars, and perpetual curates as have been duly instituted in their offices. Every I., or holder of a parochial benefice, has care of souls in his parfocular offences, has care or some in measurements own par. (see impropriation), and it is a spiritual offence for any other clergyman to preach, read prayers, or otherwise officiate in the par. of another I. without authorisation of the diocesan bishop. An I. is ex officio chairman of the vestry, and upon lain devolves the duty of keeping the local register of marriages, baptisms, and burials. Two Is. may in certain circumstances effect an exchange of livings (see also GLEBE, as to extending noor hvings) by deed. An I. may be deprived of his living for illiteracy, minority, sunouncal offences trafficking in benefices), lack of holy orders, conviction for factors. felony, and other crimes, and such spiritual offences as affirming doctrines (on-trary to the Thirty-nine Articles, heresy, schism, and demanding payment for administering a sacrament. An I. may resign by application to the ordinary, but a resignation is invalid unless assented to by the bishop.

Incunabula is a word derived from the Lat meaning a cradle or by., but has come to be used in a very specialised sense to signify the earliest books printed from type, and more particularly those printed before the year 1500. Since the invention of printing in Europe is generally attributed to the invention of printing in Europe is generally attributed to the forest whose the books are ted to Gutenberg whose first books appeared about half-way through the fifteenth century, we are limited by definition to e period of about filty years. The rival claim that printing was invented earlier in the century by Laurenz Coster of Haarlem is without corroboration, and in fact there are no known books in exist-time hearing his imprint. The first book is and by Gutenberg, probably in collaboration with John Fust, was the Mazarin Bible which was printed in a Oot sie type, with initials and ornamental borders illu-minated by hand. It is interesting to note that the early printers aimed not at creating a new style smitable to the medium of type, but emulated the flu st examples of existing illuminated manuscripts. Chu famong the notable books which came from this press were the Psatter of 1457. the first book in the last, of printing to bear a date, and the Latin Bible of 1482.

Franting was first introduced into Italy

tery of Subiaco in about 1464, and this country rapidly achieved supremacy in the art. Venice became pre-eminently the centre, attracting many printers, among them ba spira, Jenson, Ratdelt and, later, Aldus. The It. MSS. of the time to which these printers turned for their models vire written in the humanistic script, a refinement of the caroline minuscule. This round, cursive and easily legible hand became, fortunately for the avesight of the modern would the Scientisto Instrument Co., Cambridge; for the eyesight of the modern world, the and P. Lequeux, Paris.

Incumbent (Lat. incumbo, I bend or roman' type-faces, Germany, the only tean), word which is said variously to country not to adopt this design, still uses

type-faces based on the Gothlo letter, or lettre de forme. 'The length of the eds, of the earliest books was governed chiefly by the capacity of the type to stand up to the printing press, and numbers averaged about 200-300 copies, rising to about 500 by the end of the century. The fact that the total number of books printed in Venice alone by the end of the century is estimated to have been about two million, gives some idea of the rapid expansion of printing from its inception. Paper, then a staple product of Italy, was chiefly used for books, though frequently a smaller part of an ed. was printed on vellum. Many eds. were illustrated with woodcuts, some of which were afterwards illuminated by hand. A notable illustrated book was Hypnerotomachia Polifili which red over 500 woodcuts. Caxton Aldus' contained over 300 woodcuts. Carton set up his press at Westminster in 1476, though his first book, The Histories of Troy, also the first to be printed in Eng., was printed at Bruges a year earlier. This was followed by an ed. of the Canter-bury Tales, and in 1481 he issued his first illustrated book, The Mirror of the World. Caxton used a formal Gothic type and also 'secretary,' a cursive version of the same face. His achievement lay not so much in the quality of his work which was not equal to the best It. printing of the time, as in the fact that his prolific output did much to establish a national Eng. language.

The difficulties of establishing classifi-cations of I. spring from the fact that so many early books are not only undated, many early books are not only undated, but also bear no pruter's name. Identification is most safely made from the type-face. Haebler's Tupenreperforium der Wiegendruck (1905) takes this approach. Other earlier olbilographies are Panzer's Annales Typographic (Nuremberg 1793), and Hain's Repertorium Bibliographicum (Stattgart 1426-38). In more cent times we have Robert Prices more recent times we have Robert Proctor's Index to the early printed books in the British Museum (1893) which has been revised and expanded since the author's death.

Indecent exposure of the person in public is a common law misdemeanour, punishable by tine or imprisoument with hard labour or both, whether there be an intention to violate the canons of decency or not. The public exhibition of ob-cene writings, pictures, or photo-graphs is punishable by fine and imprisonment, and magistrates have power to issue search warrants for the seizure and destruction of obscene books or pictures in places where such articles are suspected to be sold or deal with for profit. Advertisements dealing with venereal diseases also come within the Acts prohibiting the exhibition of in-Acts prohibiting the exhibition of in-decent writing or prints, and are punish-able on summary conviction with one month's imprisonment or a fine of 10s. Sending indecent prints, books, etc., through the post is punishable either on indictment with twelve months' imprison-ment with hard labour, or summarily by a fine of \$10. An indecent assault mon

not exceeding two years, under the Offences against the Person Act, 1861. Sodomy or bestiality is a felony punishable by penal servitude for life, or imable by penal servitude for life, or imprisonment, not exceeding two years, with or without hard labour. The Criminal Law Amendment Act, 1885, provides a punishment of not more than two years imprisonment with or without hard labour, in the case of any male person publicly or privately committing, or being a party to the commission of, any act of gross I., with any other male person. Scots law is practically similar in all respects.

'Indefatigable,' The, Brit. battle-cruiser launched in 1911, 12-in. guns, 23 knots. On the outbrenk of the First World War she was stationed in the Meditorranean. During the battle of Jutland (q.r.) she was a unit in Adm. Beatty's fleet, but was sunk by the Ger. battle-cruiser Von der Tann. A Brit. fleet air 1939, now bears the name.

Indefinite, in mathematics, was originally used for infinite, but at the present time is generally only to be found in the phrase I. integral, to denote the process of integration, without reference to limits. $\int x^n dx$ and $\int a^n x^n dx$ are respectively I. and

dofinite integrals.

Indemnity, contract, express or implied, to keep a person unmune from liability under a contract into which he has entered, or intends to enter. Contracts of fire, marine, and accident insurance (but not life assurance) are instances of such contracts. An I. differs from a contract of guarantee or suretyship, because the liability of a guarantor or surety depends upon a third person, the prin debtor, making default, whereas the person under a liability to indemnify another is bound a hability to indemning another is bound to do so, irrespective of the default of other persons. A contract of I. is not, but a guarantee is, within the Statute of Francis (see CONTRACT, and FRAUDS, STATITE OF), and, therefore, the form of an I is inmutaerial. Other familiar examples of is, are the implied contracts by one to independ their negretally deports prins, to indemnify their accredited agents from all hability properly incurred in rela-tion to the agency. This print in the law of agency also applies as between partners. A contract to indemnify a person against liability for an unlawful act is void. In a wider sense L councies that unwritten prin. of our law which enjoins the obligation of the state to compensate a person whose private property has been com-pulsorily taken for public purposes; a prin. which, in particular cases, finds statutory expression in various private Acts of parliament supplemented by the Lands Clauses Acts.

Indenture, practically synonymous with a deed (q.r.), since the requirement of 'indenting' the edges became unnecessary to the validity of an instrument. An L. was an instrument made between two or more persons with distinct interests, as opposed to a deed poll or instrument made ment with hard labour, or community upon opposed to a deed pon or insertains fine of \$10. An indecent assault upon opposed to a deed pon or insertains having identical interests. Formerly, copies of for nothing to-day. Its fall after the an instrument were always made on the First World War was due to faction. A same parchiment, or paner, and then cut into as many parts as there were copies, with a wavy or scalloped line, so that the genuineness of any part could at any future time be estab. by merely fitting that edges together. Other formalities having taken the place of 'indenting,' the defeated that the place of 'indenting,' the place of 'indenting,' the place of 'inde signation of a deed as an 1. is now more surplusage.

Independence: (1) The cap, of Buchanan co., lown, U.S.A. It is situated on the illinois Central, and on the Chicago Rock Island and Pacific Railroads, also on the Wap-spinicon R. The tn. is noted for farming, and has iron foundries. Pop. 1,300. (2) The cap. of Montgomery co., Kansas, U.S.A. It is situated on the Verdigris R., and on the Atchison, Topeka, and Santa Fc, and the Missouri Paeric Rul roads. It is the centre of a natural oil and gas region. The chief industries are agriculture and the manuf. of cotton. Pop. 11 500 11,500.

Independence, American War of, see UNITED STATES OF AMERICA, History. Independence Day, commemoration observed in the U.S. on July 4. It is a legal holiday, and is kept up by various celebrations, such as patriotic speeches and meetings. It commemorates the Declaration of Independence on July 1. 1776.

Independence, Declaration of, see DL-CLARATION OF INDEPENDENCE.

Independence Hall, building in Philadelphia, where, on July 1, 1776, the Declaration of Independence was adopted by Congress and read to the people. The Continental Congress met there. It is now used as an historical museum.

Independent Labour Party (the ' I.L.P.'), throughout the greater part of its list, the largest and most influential of Brit. Socialist organisations. The LLP, was founded at a conference field at Bradford in 1893 over which J. Keir Hardle, M.P., presided, and, as illustrative of the close connection of the man with the party it may be mentioned that Keir Hardie was elected in 1913 to the chairmanship, so that he might preside over the comingchair no might preside over the coming-of-age conference. Other distinguished chairmen have been J. Ramsay Mac-Donald, M.P., and Philip Snowden, M.P. (later Lord Snowden). The fortunes of the I.I.P. have been intimately bound up with those of the Labour Party which it created and to a certain extent dominated. On Feb. 17, 1930, the Prime Minister, Ramsay MacDonald, severed his connecramsay macronaus severed his connection with the I. L.P., an example that was almost immediately followed by Philip Snowden, the Chancellor of the Exchoquer. The reason for these realguations was that during the last few years the organisation had increasingly adopted the policy and approved the actions of the more advanced section of the Labour Party in the House of Commons.

substantial section of its membership was strongly pro-Soviet, and a part broke away when the Communist Party was formed. The LLP, became the advocate of 'Socialism in our time' and at one Labour Party Conference after another its socialist resolutions were voted down by the trade union block vote. The ex-perience of the second MacDonald Gov. brought the dispute to its crisis, and the L.P. under James Maxton seceeded from the Labour Party and, in the secession, the Labour Farty and, in the secression, split again, the antiscressionists joining with Sir Stafford Cripps and Mr. Ernest Beynn's Society for Socialist Inquiry and Propaganda to form the short-lived Socialist League. What remained of the Socialist League, What remained is the socialist League. I.L.P. under Maxton had its main influcure on (I, deside. In the Second World World War it was 'anti-war,' not on pacifist grounds, but because it persisted in design of the control of the contr socialists can unite with capitalist parties in any circumstances without betraying So mism. It is not a little ironical that the present Labour Party Gov, has not only passed sev, nationalisation Bills but would seem to be committed to a policy of Socialism well within our time.

Independent Order of Oddfellows, see ODDILI LOWS.

Independents, or Congregationalists, see CONGREGATIONALISM.

Indeterminate, in mathematics, used in in mathematics, used in sect. connections. Simultaneous equations are called 1, when an insufficient number of such equations is given. Thus the equation 5r + 3y = 21, where x and y are independent unknown quantities, is L_s . and has an infinite number of solutions. In the differential calculus the name Indeterminate is given to such expres-

sions as the limit of $\frac{a^2-y}{a-x}$ when x=a, which take the form " or 'imil'er forms.

su h as on, 0 x on, etc.

is one of the fundamental laws of algebra. and is known as the Index Law. So also $a' \cdot a^n = a^{m-n}$, and $(a^m)^n = a^{mn}$. It has been found convenient to make use also of fractional and negative indices. which at first sight seem unintelligible. To ensure that the Index Law $a^m \times a^n = a^n$ shall be true for all values of m and n, integrel and fractional, positive and negative, we give to such quantities Maxton, the leader of this small but energetic group and one of the severest critics of the Labour Cabinet, then became the formula leads us. Thus $a^{\frac{1}{2}} \times a^{\frac{1}{2}} = 0$ chairman of the I.L.P., and held the post again from 1934–39. The I.L.P. counts

also $a \times a^4 =$ gonerally 1 and a × a 4 $a^{*} = \frac{1}{a^{*}}$ and more $= a^4 - a^0 = 1$ generally $a^n = \frac{1}{a}$ See also Log Arithms

Indexing, operation of compling an alphabetical list of statements and allusions contained in files or in a book or sions contained in files or in a book or series of books or periodicals, together with the page number folio number or other r ference to where the indexed matter is to be found. An Index differs from a 'table of contents' by being a more complete analysis of the contents, and by heing arranged in alphabetical order. The term as applied to the I of books and periodicals have been in use since the six teenth century and derives from the Lat. teenth century and derives from the Lat word index which was used by (icero and other classical writers in the same sense Calendar, inventory and register were alternative terms which have now been super-seded Specialised I such as that of the contents of a library is more properly termed cat doguing (20), while an index of the works it a single author or a works on a given sulject comes under the healing of bibli graphy (q t) There were a number of indexes to books pub in the sixteenth century among the most notable being that to the 1 156 ed of Poly dore Vergil's Anglica Historia Many in dexes of the seventeenth and eighteenth centuries were intended more as whimseld enticements to the realer to dip into the contents rather than as a sorious unity is of the subject matter. The index of the Spectutor, Latter, and Guardian (17.7) was, Spectutor, I atter, an I Guardian (17.7) was, however, a model of its kind. During the nineteenth century and after, a number of scientific and informative works have made I an indispensible ind to the reader while the growth of periodical writing brought into being a number of cumulative indexes, an early example of which was W. F. Pooles Index to I created I therefore a time? (New York, 18.3) A 'general' index contains entire under proper pages and subject to drive the driver. names, place names and subject headings. It may however be advisible to provide two indexes to a single work one being an Index of names and the other an Index of Subjects In a subject indea the selection of catchwords presents the indexer with a problem which he can only solve by an problem which he can only solve by an understanding of his suth it and by an assessment of what the relier to whom the work may be unknown whild look for Corrict alphabetical order is never so simple a process as it may seen to the in experienced. It should be carried through either to the end of the initial word or to the end of the initial group of words, that is, to the first mark of punctuation If, however there are two or more entries with idential cat theords, as may happen when indexing references to two persons with the same name, then the order is decided by the words (e.g. Christian name or initials) which follow the comma after the catchword Indexes prepared for press may be compiled either on the slip

system or the card system. The slip system consists of allotting a slip to each letter of the alphabet or each subdivision of a letter (* g , As-Ak, Al-Aq, Ar Az)
The entries are then made on the appropriate slip. The card system differs from
this in that each reference is written on a separate card which bears the appropriate catchword as a heading. The cards ma-then be sorted into alphabetical order and ed when all the entries are complete. The ny nifon of the card index system is attributed to the Abbo Jean Roder (1734), whose I this des Vémotres de Le term des senes was pub in 177. It is the only suital to notice for company to the control of the control pling an expansive index of eg files to when contain additions are being made. In book and ving if the eleminate of references under on entry the references should themselves be classified under a properties sub-headings which may be arranged either alphabetically of the properties of the reference of the refer may be arranged either alphabetically or in chronological order or in the order in which the appear in the our e of the box—the choice being determined by the nature of the work to be indexed. So H. B. Wheetley, How to make an Inter 190.—C. R. Cutter Lules for a Dictionary (at digue (4th ed.) 1904.—A. I. Clark Manual of Practical Interior, 1333. Index Librorum Prohibitorum the title of what of hoose we shipted by the Lee-

of a list of books prohibited by the Lea Church on doctrinal or moral ground the onem of eccles prohibitions duce from a very culy pened in the hist of the Church and the culiest known in stince is the Value Librarum, spoery Il rum pur non recipiuntur restalorne of forbillen apoeryphal work issued by Pope Gelagias (414) Whit may be re garled as the first Itom Index was pub-by tops Paul V (1) 1 9) through the In maxion at Lome and was confirmed by (1 nent VIII in 1) When the books in the list or catalogue are allowed to be real after execution or alteration with the expressed of the orders of the papid authorities the list is termed Inder I rpargatorius Later Pope Sixtus V organised a special congregation, con sisting of a prefice cardinals consultors and examiners of bools the proceedings being giverned by rules laid down by Pope Lendut XIV in a constitution issued in 1753. All books considered permeables to its in Catholics and all ver sions of the Bible by un authorised persons are place on the Index by the Congrega tion of the Holy Office

Obscene books are forbidden except 'classical uithors, ancient or modern 'classical uthors, anclost or medicinon a count of the elegand of their diction which are not to be used for teaching children. The ban still remains on Gibbons Declar and Fall The works of David Hum John Stuart Mill and Oliver Goldsmith for his histor of England) are proscribed slong with Stories for his Sentimental Journ y Savonarola, Kant, Voltaire, and Groce share the Index pages with Steindhal and D Annunzio. The Book of Common Prayer is also banned Dante, Copernicus, and Galen have been removed.

have been removed

Any living author placed on the Index

can earn remission by re-writing his book or cutting out the offending passages, Permissions to read forbidden books are granted to students. See T. Hurley, Commentary on the Present Index Legisla-

tion, 1908.

India, extensive peninsula or sub-continent of S. Asia; after China the most populous country in the world. The pop. of the country approaches 400,000,000 and is composed of a heterogeneous mass of various nations, having different lan-guages, faiths, and customs. Since the beginning of the seventeenth century the hist, of I. has been closely connected with that of it may been closely connected with that of Great Britain. In course of time it became a dependency of the Brit, empire and afforded a lunge mikt, for her produce and also a great held for Brit, capitalists. At the same time it developed a great number of highly profitable secondary industries of its own. The name by which the country is known, 'India,' is derived from the Persian name Hind, which has been handed down to us through the Gks, and Roms. This name is derived from the Sanskit name given to the R. Indus (Sindhus). At times the name Hindustan is been applied to the whole peninsua, but the is incorrect, since the name applies only to a particular region of that country. The natives of I. region of that country. The natives of I. are so mixed that they have no one name for the country but after the Brit, occupation the official native form of the name was tixed as Hand and the Anglicised form as I. The Indian Independence Act, 1917, brought to an end the whole structure of Brit. Gov. in L. and from Aug. 15 (1947) the Indian Empire is represented by the dominion of 1., the dominion of Pakistan, and Ters. of Indian rulers function, and ters, of indeat riners formerly under the suzeranty of the King-Emperor. Except where otherwise stated herein 'India' includes the dominion on Republic) of L., the dominion of Pakistan, the states of L., and Tribal Areas. Fuller details for Pakistan under most heads will be found in the separate article PARISTAN.

Boundaries: Ara and Population.—
The political boundary of L marches with Persia and Afghamstan from the gulf of Oman to Povalo Schveikewski on the Taghdurbash Pamir. From this point the frontier, in many parts not clearly defined, touches the Chioses Empire and Nepal, up to the limits of Burina. Continental L, including Baluchistan, extends from 8° to 77° N. lat., and from 61° to 97° E. long. bellif, the cap. of the dominion of L, lies in 77° E. long., Kauschi (sind), the cap. of the dominion of L, lies in 77° E. long., The total area of L proper in 1911 was 1.581.410 sq. un, with a pop. of nearly 389,000,000. The Brit. provs., as distinguished from the Indian states, comprised 55 per cent of the area and about 76 per cent of the pop.

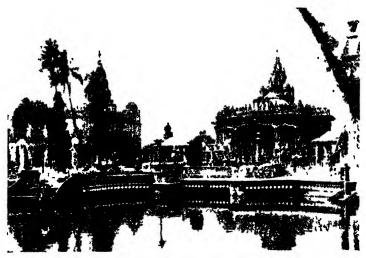
The country.—L is a large peninsula which juts out southward from the main-

which juts out southward from the mainland of S. Asia. It is a triangle in form, the huge mt. ranges of the Himalayas forming the base of the triangle, whilst the apex runs far out into the Indian Ocean. In its W. coast it is washed by the waters

of the Arabian Sea, whilst on the E. is found the bay of Bengal. The extreme length of I. is about 1900 m., and its breadth, at its widest part, is about 1600 m., but the peninsula tapers down almost to a fine point, its S. extremity being Cape Comorin. The southernmost mant is in the year centre of the translet. nont is in the very centre of the tropical region, its lat, being about 8°, whilst the most northerly point is found well within the limits of the temperate zone, i.e. 37° N. Thus the peninsula experiences extremes of weather. The official designation 1. includes not only the peninsula already described, but also Burma on the b. together with the is. of the Arabian Sea, and the bay of Bengal, and Aden and Perun, all of which are politically admin-istered as 1. On the other hand, Ceylon, an is, adjacent to the S.E. coast of I., is treated and administered separately. In former days—the days of the great companes I. was by no means altogether under the sway of the Brit., for the Dutch, Portuguese, and Fr. had settlements on the coast also. The remains of these settlement may be traced in the various that which belong to the Fr. and Portuguese which belong to the Fr. and Portuguese even at the present day, e.g. Goa (Portugue). Pondicherry (Fr.). The chlof houndaries of I. are: On the N., the limidaya Mts., which separate Tibet and Chiri; on the W., the Suliman Mts., which separate it from Afghanistan and Bahuchstan; on the S. and S.W., the Araban Sea and the Indian Ocean: on the S. and S.W., the Araban Sea and the Indian Ocean: the k., the spurs of the Himalayas, which separate it from Burma, and the bay of Bengal, an inlet of the Indian Ocean. The geography of I. can be the more easily examined and followed if we divide the examined and followed if we divide the whole country up into the three natural divs. into which it falls: (1) The int. ianges, i.e. the Himalavas; (2) the riv. plains; (3) the peninsula real, or the plateau of 1., which goes by the name of the Decean. (1) The Himalavas; This series of int ranges is the heriest int. system of the world. The range extends for a distance of 1500 m. roue? the N. band live of I and system or the N. boundary of I., and sweeps round in a half bend. The most procuptous face of the mts. is the S., forming an almost, but pot altogether, impassable boundary, two places the mt. since is severed by straine the Dihang R in the L., and the Indus in the W. The mts. soar to a height in places of nearly 30,000 ft, and are continually snow-covered. Nevertheless, since time immemorial distinct and well-known trade routes have been known and communications kept op with the countries N. of the Himalay is in spite of the barrier of the ints. The Himalayas form a double boundary to the N. of I. and send out also spurs and offshoots which fill the country between the Ganges and the parent inte-themselves. On the W. this offshoot is known by the ame of the Suliman Mis.; on the N.E. it forms the boundary between Assam and I., being known as the Naga Mis. The boundary between I, and Baluchistan is also formed by the off-shoots of the Himalayas, but these latter offshoots by no means attain the clevation

of the others mentioned. The chief passes of the mountainous div. of L are the Khyber Pass, the Kurram Pass, the Gemal Pass, and the Bolan Pass, Those form the chief means of communication between L and the N.W. See also HIMMAN MOUNTAINS. (2) The river of List the signest was the signest and the street and cation between 1. and the N.W. See also HIMALA A MOUNTAINS. (2) The river plains. This div. of 1. is the richest and most populous part. It extends in a broad helt across practically the widest part of 1, running from E. to W. From the beginning of hist, we find this part of I. the continual prey of marauding tribes, who sweep down from the hills to plunder. Iton between N. and S. firmly estab. The chief provs. of this part of 1, are two sides of this triangular plateau, which Bengal (E. Bengal in Pakistan and W. has the Vindhya Mts for a base, are

This comprises the presidencies of Bombay and Madras, together with the Central Provs., Hyderabad, and Mysore. The name of the Decean was formerly applied to it. Its N. boundary is the Vindhya Mis., a range which stretches for about 500 m. from E. to W., and which has two great peaks at each extremity. In earlier that the formed a fairly affactive burner. days this formed a fairly effective barrier between the N. and the S. of L., since the range varies in height from 3000–4000 ft It has long since, however, been pierced by both road and tailway, and communication between N. and S. firmly estab. The



JAIN TEMPLES AT (ALCUPTA

Bengal in I.), the United Provs., the Punjab (divided between the two dominions), and Rajputana. The unportance of the int. system, the Humilavas, may be judged when we see the effect of it on the well-watered plains. The Iris, system of I. consists of three greaters: the Industite Consists of three greaters and The Iris. the Ganges, and the Bramaputra. The Industrises on the N. slopes of the Himalay as, sweeps round, and enters at the W. extremity of the range, and waters the Punjab. The Ganges is formed by the amalgamation of the streams which drain the southernmost slopes of the Himalayay, whilst the Bramaputra rises also within easy distance of the Indus in the N. slopes of the Hundayas, flows E. N. of the Himalayas, for some considerable distance and then enters I. at the extreme E. point of that range. It is therefore to be noticed that the riv. system, of such vast importance to the people of 1., is the division of the Himalaya Mts. (3) The peninsular proper, the southern plateau of India:

much is proved by the marine deposits of much is proved by the inarine deposits of

formed by the E. Ghats and the W. Ghats The W. Ghats are on an average much loftly than the E. The three chief rise of this dat, are the Godavan, the Kistne, and the Cauvery These rise in the W. Ghits, but discharge into the bay of Bengdon the E. coast. The W Ghats, in fact, form such a strong barrier on the W. coast that the line of mts. is unbroken by a riv. gorge. The rivs. which rise in the a riv. gorge. The rives which rive in the W. Ghats discharging, as already stated, in the bay of Bengal and those which drain the Vindhya Mts. into the gulf of Cambay. Chief amongst the latter may be mentioned the Nerbudda and the Tapit. The three geographical divs. of 1.

appl. The three geographical divs. of I. appl. in other tespects—in speech, language, race, and characteristics.

GIOLOGY The oldest of these three divs is the peninsular proper. If has been land for many thousands of years; indeed it was already dry when the Himanary constructions are served.

the Himalayas. It is in the peninsular that we find the oldest strata; in fact, the age of the Vindhya Mts. cannot be determined. The Himalayan region is one of great compression, in which we find masses of Tertiary rocks of vast thickness. which are overthrust and folded in the most violent fashion. In peninsular I the oldest rocks consist of greiss, granite, and crystalline formations. The rocks of this region are intersected by bands of transition strata of very anct. but undetermined age. The strata are generfound in an undisturbed and the Vindhyan formations, as already mentioned, are of great antiquity. In great contrast to these regions is the region which separates the two, and which is known by the name of the Indo-Gangelie plain. This plain is covered with alluvium and sand blown thither by the winds. There is no rise in lared between the two great rive. the level between the two great rivs, the Indus and the Ganges. The alluvial deposits of the plain have been subjected to frequent examination and prove to us that there has been a gradual depression of that region even within comparatively recent times. The filef deposits which are found in the Inno-Gangetic plain are gravel, sand, and clay, together with deposits of peat and forest beds. The belta deposit has also been subjected to close examination, but its depth at this point capacity. point cannot be exactly calculated. By boring, a depth of some 480 ft. was reached, but this was known not even to approximate to the real depth. In one part of the bay of Bengal, which washes the Delta, the currents have apparently washed away the deposit brought down by the rivs. The depth of the buy here is over 1800 ft., so that, allowing for the fact that the rest of the seundings which are taken in the immediate neighbourhood only give, at most, 10 fathons, we can come to the conclusion that the deposit from the riv. has filled up the bay in that part, and that therefore the alluvial deposit equals the depth of the bay, i.e. about 1800 ft. The alluvial deposit of the plain has been proved by boring to be over 1000 ft. in thickness and we are able to gather that the depression of the Indotangetic plain is of recent date, and that it is probably connected with the elevation of the N. mountainous dist., the Himalayas.

CLIMATE.—Not unnaturally, in a country which stretches from the tropical regions to well into the temperate zone, many differences will be experienced in the climate. Any extreme of climate, then, either of the tropics or of the temperate zone, will be found in 1. Its geographical characteristics have great influence on this, especially the huge mt. barrier of the N., which prevents any inducence of the plateaux of Central Asia, and its peninsular point surrounded by the sea in the S. The whole country experiences three well-marked and well-defined periods either a tropical to the cow, ox, and buffalo. The two latter are used principally as beasts of burdeu, the cow being regarded as a scred animal by the Hindus. Horses are hoteo, but to the rainy seasons. The cool months are experienced during Nov., Dec., Jan., and the early part of Feb. The weather is then at its pleasant-working native pop. Doukeys and mules

est, dry and cool. The hot season which follows belongs, at any rate officially, to March. From this time until the middle of June, there is a continual rise of temp, which is experienced with greatest severity in Central and Southern I. The contrast in temp, during the cool mouths is between N. and S., but during the hot months the contrast is between the interior and the coast. It is in the interior of Northern I. (Punjab) that the greatest temps, are experienced during this period. The monsoons or the rainy season usually begin about the middle of June. These monsoons are caused by the absorption by the sun of moisture from the ocean, and if the monsoons fail, then follows one of those famines which periodically do so much harm to I. The rainy season lasts for about three months, and during that period rain is generally experienced all over I. The rainfall is by no means, however, equal all over I. Parts escally in the Deccan, are left after the rains with a very small supply of water, hence arises the necessity for a good system of irrigation and canals. At one place the average rainfall for the year is 500 in. (Cherrapunji). The season which inmediately follows the rains is the most unhealthy of all. The monsoons cease about the middle of Sept., and the months which follow, Oct. and Nov., may be regarded as the Indian autumn. During this period malaria and malarious diseases are usually rife especially in the N.

are usually rife especially in the N.
I'u v..—The lion, although at one time threatened with extinction, is now found fairly plentifully. A variety pecular to 1., i.c. maneless, is found here. The chief beast of prey, however, is the tiger, which is practically ubiquitous. The advance of civilisation and the attacks made on this animal by sportsmen have caused the tiger to become rarer than formerly, but it is by no means exterminated. man-eating tiger is usually an old animal that has become too enfecbled to be able to eatch his ordinary prey, but kills often from sheer desire to destroy, and is a real curse to the country in which he is found. It is no unusual thing to hear of a man-cating tiger which has killed over 100 presons. The favourite method of tiger shooting is from the backs of elephants. The leopard is found in even greater numbers. The destruction to life and property caused by this animal is enormous. The cheetah is another type often confused with the leopard proper. Amongst the other wild animals to be found are the hear, boar, wolf, fox, bison, elephant, and rhinoceros. Wild goats and wild sheep rinnoceros. Wild goats and wild sheep are found at considerable altitudes in the limidayas. The wild ass is also to be found in parts but is practically unapproachable owing to its timidity and speed. The dome-ticated animals are chiefly the cow, ox, and buffalo. The two latter are used principally as beasts of burden, the cow being regarded as a surred animal by the Hindus. Horses are bred and but wearfly the bread and but wearfly the bread has been

are used very considerably. Sheep and may be regarded as an extension of that goats are plentiful, as is also the pig, but found in the prin, dists, which immediately this latter animal is of little use, since by border on the peninsula, i.e. of China, the majority of the native pop. It is despised and abhorred. Monkeys abound, but they are regarded as sacred, and archerefore in perfect security and become very tame. Deer of all kinds abound very tame. Deer of all kinds abound throughout the country, and they are of use chiefly in providing sustenance for the

beasts of prey.

The rivs. are injested with crocodiles and alligators. Poisonous snakes abound, the most deadly being the Cobra da Capello the hooded cobra). Another dangerous reptile is the Russchan snake; specimens of this latter are usually carried about by the native showmen, who cause them to assume a position as it duncing whilst they charm them with music. Many of the snakes, however, are innocuous, and the dangerous ones are gradually receding before the march of civilisation, since the gov. offers a reward for every one which is killed.

The birds of I. are of the usual tropical rietles. The birds of prey include the varieties. The birds of prey include the vulture, the eagle (many specimens of which are to be found), and falcons of all kinds. Herons and kingtishers abound. and are much sought after on account of their plumage. Waterfowl are particularly numerous, and almost all the game birds found in Europe abound also in I., e.g., pigeons, partridges, quail, plover, and The jungle fowl of I. are supposed to be the ancestors of our domestic fowl. The supply of fish in sea, lake, and ny, is exceedingly abundant, and, indeed, forms

a very great proportion of the food of the poorer classes.

FLORA.—I. has no peculiar botanical features of its own. Its geographical position, however, as in many other research consents were the proportion of specis, causes its vegetation to be various and plentiful. Its products are those of the tropics and of the temperate zone. Rice has always been the staple product. The products of the tropical regions are tobacco, sugar cane, and spaces. Tea is grown on the slopes of the E. Himalayas, and has become one of the main products of 1. In Assam the tea plant is found growing wild. Coffee has been grown in the 5. parts of the peninsula, but with somewhat indifferent success. The chief trees what munerom successive the mango, orange, banvan and bamboo. The teak and various other trees useful for timber are produced in the more hilly dists., whilst on the slopes of the Himalayas are found the cedar, fir, and pine. But within recent times a Forestry Dept. was set up for times a forestry Dept. was set up for I., and the forests, which previously had suffered much owing to wanton destruction, are now more carefully preserved. The total area of forest land under the control of this dept. is above 160,000 sq. m. Of this total, 98,000 sq. m. are reserved and worked scientifically by the State. This forestry dept. has been taken over by the Indian Dominions (for. The most indigenous flower is the water-lify, and European flowers are found in the and European flowers are found in the greatest profusion at the present time.

The whole of the vegetation of I., however,

found in the prin, dists, which immediately border on the peninsula, i.e. of China, Persia, and Malaysta.

(ENSUS OF 1941.—The census of I. for 1931 gave a total pop. of 338,119,000, divided into 256,686,500 for the prov and 81,361,000 for states and agencies. The census of 1941 returned the total pop. us 388,997,955-an increase of nearly 50,000,000 in ten years—the pop. for the provs. being returned as 295,812,000 and for the states and agencies as 93,189,000. for the states and agencies as 9.3,189,000. Just over 19,500,000 people form the urb. pop. of L. and slightly less than 339,500,000 her rural pop. Thus the turb. pop. is to the rural approximately as 1:7. In all 1, there are 935 women to every 1000 men; in the Pumpb the igure is 847. To be set against this sections discrement is the estimated total of \$47. To be set against this actions discrepance is the estimated total of 9,000,000 widows, largely very young, debarred from remarriago by the stern decree of Hindu enstom. The this of a pop. of 5000 and upwards number 2703 and the vils. 655,000. For all 1, the density is 246 to the sq. m., in Bengal it is 779, which is far higher than that of Great Britain. Of the provis, Sind with 91 to the sq. m. has the least density of any provis. A city is a fri, with no 6 wer than 100,000 inhab. Of these there are 58 in India, and 23 of them are new, owing their rise to the development of ports and industry. By far the greatest number of this, and vils, come into the class with fewer than 500 inhab.—a fact which accounts for the slight density cass with tewer than 500 innot.—a fact which accounts for the slight density of pop. In the last lifty year, Calcutta (India), has trebled its pop.; Madracutta (India) and Bombay (India) have nearly doubled; and Lahore's (Pakistan) pop. has increased fourfold. The influence of the rise of industries and overseas trade on the growth of cities is seen in such places as Karachi (Pakistan), Jamshedpur (India), Ahmedab id (India), Trivandrum (Tra vancore), and Sholapur (India). Karachi had 98,000 linhab. fifty years ago; in 1941 if had 359,500. In the same period Jamshedpur, the seat of the Tata steel and iron works, increased from 5672 to 148,711; Ahmedabad from 144,151 to 591,267; Trivandrum from 27,887 to 128,36; and Shelapur from 61,91, to 212.620

Political Divisions .- The total area of I. may be divided into Provs. and Native States, and former Agencies (which were in political relations with the Indian Gov. and more or less under the control of Brit. officials). Reference to the present poli-tical orientation of the Indian states is made below.

The following tables give the provs., unions, and former states of the dominions

of India and Pakistan with area, total pop., and density per sq. m.; and the areas and pop. of the former agencies.

CITIES AND TOWNS.—The prin. oities of the Dominion of India, the Dominion of Pakistan, and other cities belonging to States are:

Dominson of India: Calcutta, 2,108,900; Bombay, 1,489,000; Madras, 777,500; Ahmedabad, 591,300 Delhi, 522,000;

THE DOMINION OF INDIA

Provinces and Capitals	Area in	Population .		
	square miles	Census 1941	Per square mile	
Ajmer Merwara (Ajmer)	. 2.400	583,693	244 · 0	
Andamans and Nicobars (Port Blair)	3,143	33,768	10.7	
Assam (Shillong)	49.473	7.088.131	143.2	
West Bengal (Calcutta) ,	26.912	19.341.746	718.1	
Bihar (Patna)	70.368	36.548.051	519.4	
Central Provinces and Berar (Nagpur)	. 130,475	19.788,584	151 - 6	
Coorg (Merkara)	1,593	168,726	106.0	
Delhi (Delhi)	574	917,939	$1.599 \cdot 2$	
Himachal Pradesh	11,251	936,000	83.2	
Kutch (Bhuj)	8,161	501,000	59.2	
Madrae (Madras)	. 127,610	53,766,810	421.3	
Orissa (Cuttack)	. 55,835	12,774,544	228.8	
Panth-Piploda	. 25	5,267	210.7	
East Puniab (Simla)	. 35.681	11,628,919	328 · 8	
United Provinces (Allahábád)	106.247	55,020,617	517.8	
Unions		,,	••••	
Saurashtra	. 31,885	3,522,000	110.5	
3.5	7 5 15 44	1.838,000	243.9	
171-11 13 1		3,569,000	145.0	
the decide with more		12,000,000	99.2	
Madhya Bharat (Malwa Union) . Patiala and East Pumab		7,150,000	151.4	
racing and rast runjan .	. 10,119	3,424,000	338 · 4	
States merged into:—				
Bombay Province (174)	. 26,951	4,402,000	163.3	
Orissa Province (23)	23.547	4,046,000	171.1	
Central Province and Berar (15) .	. 31,719	2,834,000	89.3	
Madras Province (2)	1,111	483,000	333 · 7	
East Punjab Province (3)	. 370	810,000	2,189 · 2	
Bihar (2)	. 623	208,000	334 . 0	
THE DOMESTON OF PARTIES				

THE DOMINION OF PARISTAN

Procences, Chuf States	and Ca	apital·	4	Area	Census 1911	Per square mile
West Punjab (Lahore) .				62,100	16,870,900	271 - 7
Sind (Karachi)				48,136	4,535,008	94 · 2
North-West Frontier (Pesh	awar)			14.263	3,038,067	213.0
East Bengal (Dacca)' .				54,100	44.081.381	814 · 8
Baluchistan (Quetta) .				131,002	877.835	6.1
Bahawalpur (Babawalpur)				17,491	1.341,209	76·6
Khairpur (Khairpur) .				6,050	305,787	50.3
1 Ustumated 1947		* In	clusi	e of Sylket, i	tormerly part of A	lssam

THE FORMER AGENCIES

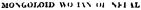
***** * ******** **********************	•	
Agency	Area in square miles	Lopulation (1941)
Baluchistan :		
Kalat State and Las Bela State	7,132	63,000
Baroda and the states of Western India and Gu, arat:		
Baroda	8,236	2,855,000
Western India, etc.	43,547	6,050 000
Control India:	40,011	0,000 000
	. 1 4 *	
States: Indore, Bhopal, and Rewa	52,017	7,508,000
Decean and Kolhapur States	10 870	2.785.000
Eastern Stutes:		
Cooch Behar, Tripura, Mayurbhani, Patna,		
Bastar, and Kalahandi	CE 2714	0 007 000
	65,210	8,087,000
Madras States:		
Malayalim States of Travancore	7.662	6,070 000
Cochin	1.403	1,422,000
North-West Frontier:		-,1,000
Chitral and four other states	9,061	EVO 000
	9,001	588,000
Punjab States:		
Patiala, Bahawalpur, Khairpur, Nabha,		
Kapurthala, and Jind	49,521	6.594.000
Rajputana:	40,0-2	0,002,000
Tonk, Palanpur, Bharatpur. Dholpur		
and other states	132,559	13.670,000
	,	20,010,000

Cawnpore, 487,300; Amritsar, 391,000; Lucknow 387,200, Howrah, 379,300, Nag pur, 302,000; Agra 284,100, Benaces, 263,100; Allahabad, 260,600; Poona, 258,200; Madura 239,100, Sholypur, 212,600; Baneilly, 192,700, Jubbulpore 173,300; Patna, 17,700 Surat, 171,400; Mccrut, 169,300, Trichinopoly, 1,9,500; Bangalore, 248,300; Mysore, 1,0,300; Jamshedpur, 147,700, Ajmer, 117,200, Moradabad, 142,400, Jullundur, 13,300; Combatore, 130,300; Sidm, 129,700, Hyderabad (Sind), 125,200, Calcut, 215,500; Bhatpara, 117,600, Aligarh, 115,600; Ludhiana, 117,600, Shipahan pur, 11,100; Sahiranpur, 108,200; Gaya, 10,200; Jhansi 10,200

Mongolo Dravidian type, Bengal and Onsea Mongoloid of the Hinnalayas, Assam and Rutma the Dravidian (q t) type, which extends practically (q:) type, which extends practically throughout the whole of the peninsula propel

helmon — the chief religions of 1, with the additions to each is given by the 1941 (casis as follows. Hindu 254 930 506 (re. 6) per cent of the total pop.) Mohammedan or Muslim, 92.0 8,006 (re. 24 per cent), leaving 11 per cent for the temperature fuding the first for the remaining religions, and the first form of the first form. including Indian Christians, 6 116,549, 53kls 5 691 447 Jams, 1,119,286 1 arsis, 114 590 Jew 2.,180 Bondes these, there are 2,441,489 persons des







INDO ARYAN OF JAHUR

Hyderabad (Hyderabad State) States 73 i 100 , Sringar (Kishun) 207 800 Indore (Milwa Union), 205 700 Lashkar (Malwa Union) 182 500 Jupur (Japui), (Many) (182) (Many) (175,800 Paroda (Burda) 1,3 800 kolar Gold Fields (Masore, 133 800 Trivandium Travancore) 128,700, Blaner (Fikaner), 127 200 Jodhpur (Jodhpur) 126 800 Bhavnigar (Saur ashtra Union), 102,800

Racial Types — The whole 1 op of I may be divided into at least seven distinct racial types — The following is a list of the racial type. The following is not the types, and the dista in which thuse types most frequently prevail the Turko Iranian tyme, Baluchistan and N W Frontier the Indo-Arvan type, Punjab, Rajputana, and Kashmir the Scytho-Dravidian type of Western I the Aryo-

Dominion of Pakistan I shore 671,600, ctil d is 'Iribes' including persons of Kirachi 39,000, Dater 21,200 Rawal the Annulst telagon and of this total pand 181,100, Multan 11,200 Silákot 77,0000 believe in magic and strive to 138,300 Peshawar, I 1,000 Silákot 70 peritrite impersonal forces. Unspeci the Malmis of Mohammedans who are in terms at a gent rate than the Hints are influenced by the customates who are the first are influenced by the customates than the contact of the customates and the customates the state of the customates are the customates and the customates are the customates and the customates are the customates ar sy em and other Hindu characteristics The oldest and most primary of all those religious is that of the Animist I rom the Animist to the Hindu is, however, a gir if step, the chief characteristics of the Hindu faith being the belief in a large number of gods, in the casto system, and in the cow as a sacred animal Buddhism, Jamism and the religion of the Sikis can be held to be almost offshoots of the original lindu faith, and in fact, other beliefs which can be held to differ far more than Buddhism from Hinduism are regarded simply as sects or off-hoots of the original Hindu faith Of recent years Dravidian type, United Provs and Bibar; the hostility between the Illindu and the

Moslem has sometimes seemed to be considerably on the decrease, but after the partition of India in 1947-48 there were formidable outbreaks of religious conflict especially in Binar and the Punjab. Whereas, however, there are innumerable sects and schisins amongst the believers. in the Hindu faith, there are but two seets amongst the Muslims—the Sunnis and the Shiahs. The Sunnis in I. are greatly in the majority. The original Moslein pop. was found amongst the Mongols and Pathan; who invaded I. a. conquering races, and even to the present time it is possible clearly to distinguish the descendants of these conquering races who were originally Moslem, from the converts of the conquered race who followed the faith of the conquerors less from religious convicion than from the desire to better their lot, and whose descendants since have become as fanatical as the des-cendants of their previous conquerors. The majority of Buddhists are found in Burma. Most of the Parsis are in Bombay (in 1941 there were 89,500); of Hombay (In 1941 there were 89,500); of the Sikhs over 3,000,000 are in Madras, Travencore, and Cochin. The Indean Christian pop. of Bombay is over 320,000; and there are some '''00 Jews there. In the Native States the totals (in 1931) were: Hindus, 61,467,000; Mushuns, 10,657,000; Buddhists, 94,000; Tribal, 2,501,000; Indian Christians, 2,430,000; Sikhs, 1,115,000; Jams, 799,000; Parsis, 13,000; and Jews, 3000.

HINDU PHILOSOPHY. The Indian mind, as is evident in Sanskrit literature.

as is evident in Sanskrit literature, is strongly disposed to metaphysical speculation, and this tendency may be seen in the old religious lyrics. In the later age the old religious lyrics. In the later age of the hynns the pantheistic idea becomes dominant and finds its outlet in cosmo-gonic speculation, becoming fully devel-oped in the Brahmana period. The fundamental conception of this doctrine is expressed in the two synonymous terms is expressed in the two synonymous terms brahman, originally 'power of growth,' then 'prayer' or 'devotional impulse,' and dimen, 'breath,' self.' soul.' The recognition of the e-sembal sameness of the individual souls conaneting all nike from the ultimate spiritual essence (parama-brahman) involved difficulties for a propulative minds, which turned for (parama-branman) involved directives for speculative minds, which turned for a solution of their problems to metempsychosis (aamadra), speculations which were not approved by the great body of Brahmans engaged in ritualistic practices. The body of treatises propounding the practices. the pantheistic doctrine, the Upanishads, were, later admitted into the sacred canon were, sitter admitted into the sacred canon as appendages to the ceremonal writings, the Brahmanus; and they thus form literally 'the end of the Veda,' the Vedasia, but their adherents claim this title for their doctrines in a figurative rather than a material sense, as 'the veda.' It is difficult to determine the time when the so-called Darsonas ('de-

orthodox as being consistent with the Vedic religion: Puru-mindimed and Uttera-mindined (Vedanta); Nankhau and Voya: Nyaya and Veus-shika—each pair being more closely related to each other than to the rest. See Jurther under Sankara; Sankiiva; Sanskrit Language and Literature; Yeda and Vedism; Ve-INTERATURE: VEHA BIR VENDON, VEHALA, OT L'PANISHAD; VISHNY; and YOGA. For the tenets of the two great anti-Brahmanical sects, the James and Buddhists, see under Jainsm; BUDDHA and BUDDHISM.

LANGUAGE.—Today the very speech of the people in L and Pakistan has become a matter of bitter communal dispute. Most of the peasants continue to talk the speech of their fathers but the literate mmority and politically-conscious in-dwellers and students argue about the rights and wrongs of the 'Hindu-Urdu controversy.' The sub-continent possesses hundreds of languages and also over 500 dialects; but when tribal idion and local variants have been eliminated, we have some to major or literary languages, some south, very different. But the Hindi-triu advocates can rightly claim that so far us the ordinary person, especially in the N., is concerned, the only common language is bazuar Hindustani—a pidgin torm of mixed High-Hindi and Urdu. which together constitute the same lan-guage written in different scripts, and compose the natural speech of nearly 250,000,000 people. This is also the interary language of 140,000,000 people, and the third largest language in the world. Unfortunately this bazaar Hindustam is a basic tongue, ill-adapted for the expression of ideas more complex than slimble direction and marketing. Meanwhile Eng. remains the normal language of communication between the better educated indians from all parts of the sub-continent in a very similar way to that in which Lat. in the Middle Ages was the lingua frence of the nobility and ecclessatics all over Europe. But just as the Lat. of the Middle Ages was far removed from the classical Lat. of the schools, so the Eng. of I. shows signs of the engine a very different tongue from the Eng. of England to-day. The difference is due to ignorance, historical cir-cumstance, and natural development. There remain, however, a large number of able Indians—business and professional men—who use Eng. with the greatest facility, but use words and forms of speech which sound unfamiliar to the contemporary Brit. car. The speed, and height of pitch and tempo in Indian speech in Fig. is its most constant quality, and the extreme form is found in Anglo-Indians (Eurasians), who all to the non-Celtic ear, seem to speak like Welshmen.

Some 225 languages are recorded in

Veda. It is difficult to determine the inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in Inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Darsonas ('de-inguistic surveys as vernacular in I. and tisse when the so-called Inguistic surveys as vernacular in I. and tisse when the so-called Inguistic surveys as vernacular in I. and I. and

GOVERNMENT AND CONSTITUTION.— The present govs. of I. and Pakistan are functioning under the Gov. of I. Act, 1935, but suitably adapted to meet the current needs. The framework of the new Consitution of I, has now been thoroughly discussed in the Union constituent committee of the Constituent Assembly and it is unlikely that there will be any major alterations in the draft Constitution between now and the time when the Constitution is estab. and operative. On the Constitution of Pakistan see Pakistan. The following is an analysis of the Constitution of the Union of I.

The Union of I. is, in spite of its name, a federation. The various governmental powers whether executive, legislative, or judicial, are distributed between the centre and the units of the federal union. The federation is, however, of the Canadian type rather than of the Amer. or Australian; the powers not allocated to the units belong as in Canada to the centre, whereas in the U.S.A. and Australia they remain with the units (see FEDERATION).
The executive head of the union is a President, elected by an electoral college consisting of all the elected members of the central legislature and of the various state legislatures. The votes are weighted so that the voting strength of the central legislature shall be the same as that of the state legislatures put together. The President's term is five years, but he is eligible for re-election. He can be removed by impeachment for rigilation of the Constitution. As in Britain, the president (like the king) is a constitutional head acting on the advice of ministers responsible to the legislature. The relations be-tween the President and his ministers are much the same as between the king and his ministers in Britain. There is a Parliament for the Union consisting of the President and of two Houses, the council of States and the House of the People. The council of States, or Upper House, consists of not more than 250 members. Each state sends one representative for every million of the pop. for the first 5,000,000, and one additional representative for every additional 2,000,000. The election is indirect through the state legislatures. permanent body not liable to disolution but one-third of the members retire overy second year. The House of the People, whose normal life will be five years, consists of not more than 500 members. Election is direct, and on the basis of adult There is to be not less than one suffrage. representative for every 750,000 of the pop. and not more than one for every 500,000. In previous constitutions there

(d) Gujarati, (e) Kashmiri (main dialect Kashtawari): (4) Pahari, divided into E., W., and Central; (5) The E. group: (a) Bengali, (b) Bihari, (c) Oriya, (d) Assamese; (6) S. India group: (a) Marathi, (b) Saurashtri, (c) Hindustani. For further details on the languages of I. see Indo-European Languages of I. see Covernment Languages of I. see Indo-European Languages of I. see Indo-Europ reserving seats for the Sikhs remains to be decided, and there is a feeling among certain sections that even the system of reserving seats for religious minorities is inconsistent with the idea of a secular state. But, whether these proposals are ultimately retained or not, the electorate will in all cases be joint. There is no special reservation of seats for Anglo-Indians, but the President may required. Indians, but the President may nominate not more than two members of the comminnity to the House of the People. bill, except a money bill, may originate in either House; it is to be passed by both Houses and assented to by the President before it can become law. If there is a conflict between the two Houses, the President must summon a joint session, and the bill, with such amendments, if any, as are agreed to by a majority of the manner of both Houses, but the president of the House had a such a summer of the House had a summer of house had a members of both Houses, is deemed to have been passed by both Houses. There is a special procedure for money bills.

The various subjects of legislation have been enumerated as exhaustively as possible in three lists: Last I. or the Union List, list II. or the State list, and List III. or the Concurrent List. Any Union law on a subject in the concurrent list overrides any State law on the same subject in the event of any conflict between the two. The Union List contains over 90 entries, including such subjects as defence, external affairs, citizenship, posts and telegraphs, railways, shipping, airways, broad-casing, and atomic energy. The State List contains about seventy entries and includes justice (excepting the Supreme Court), police, local gov., agriculture, public health, and education. The Concurrent List contains about forty entries. and includes such subjects as criminal law, criminal and civil procedure, marriage and divorce, contracts, trade unions, and welfare of labour. Residuary powers are allocated to the Centre. In circumstances requiring immediate action when Parliament is not in session, the President has a limited power to make Ordinances, which have the same effect as an Act of Parliament, but ningt be laid before both Houses as soon as Parliament meets. There are also provisions on emergencies. If the President is satisfied that a grave emergency exists, which threatens the security of I. by war or domestic violence, he may make a proclamation to that effect, and thereupon the Union Parliament is empowered to make laws even in respect of the matters enumerated in the State List. Although the Constitution is of the federal type, there is not a double chain of courts, one to administer federal law and the other to administer state laws. All the courts form a single hierarchy, at the head of which is the Supreme Court of the Union. Immediately below the Supreme Court are the State High Courts, and be-500,000. In previous constitutions there low them are the subordinate courts of were separate electorates for such minor-cach state. Every court in this chain titles as the Muslems, Sikhs, and Christians Will, subject to the usual pecuniary and This is now abolished, but seats are re-local limits, administer the whole law of

the country, whether made by the Paillament of the Union or by the State Legislatures. The Suprame (ourt has exclusive original jurisdiction in disputes be tween the gov of I and one or more states or between two or more states in the salso an appelate jurisdiction over the State High Courts in all cases involving questions of law as to the interpretation of the constitution and in certain other types of cases. Recadly speaking, its appellate jurisdiction corresponds to that exercised by the Prey Council of Britain before the Indian Independence at a came into force. It is further clothed with a special jurisdiction for the enforcement of the constitutional rights guaranteed by

the constitution Indian (n 1 serine - The service that carried on the work of governing India in the time of the Brit occupition. It also included the public works, forest, and telegraphy depts, though strictly these did not belong to the Indian Civil Service. The service was limited to about 1200 members appointed by the Secretary of State for India. Vacancies were filled by open competition every summer in England the examinat being the same as for Class I of the Civil Service of Phyland (later known as Administrative Gride) The successful endidates had to pass one or two vearastudy in England, and pass in examin ition in riding and an examination in the Indian Penal Code and Code of Criminal Procedure, the prin vernacular language of the provite which they were assigned, and the Indian Land Act in addition the optional subjects were lindu and Mohammedan Law, Sanskrit Arthu, Persian and Burnese The pay began it about £720 a year, and candidates could secure high positions as judges and administrators. After twenty five years of service a pension of not less than £1000 a year was given. Under the terms of Command Paper 7192 of Aug. 1947 mem bers of the Indian Civil Service were given the option of continuing to serve the gove of I and Pakistan or retiring with com pensation Pensions and compensation alike are paid under urangements made alike are paid under urangements made with the gove of I and Pakistan Of the 1200 officials of the service there were more Indian than Brit (629 Indian and 560 Brit in 1943) Many Brit civil servants are still serving in India or Pakistan See Sir E A H Blunt The Indian (1018 Service, 1947, also L > S O Malley, I he Indian Civil Service, 1401-1930, 1931

INDIAN LAW -- I he laws of Brit I are in nart universally applied and in past

INDIAN LAW -- lhe laws of Brit I are in part universally applied and in part applied only to certain classes. There is a right of appeal to the Privy Council in England, while high courts are held in the Provs of Madras, Bombay, Bengal, Agra, Bihar, Punjah, Central Provs, and Berar These courts had (1943) 14, 11 18, 11, 10, 11, and 6 judges, respectively, while the N.W. I rontice Province, Sind, Coorg, Almer-Morwars, and Baluchistan had judicial commissioners. The high court of Calcutta was up to 1948 the highest judicial authority for Assam, but in April of that year a separate high court was set up for Assam. In descending

order of authority are the courts of session for cruninal cases and the courts of magistrates (first, second, and third grade) For Delhi the high court of Labore was formerly the highest judicial authority, but there is now a high court at I ahore ee Pakistan) and also at karachi, and at Daces, bosides a judicial Commis-ioners court at Poshawa. In the lower civil courts each prove has acts and regu-lations peculiar to itself and usually a se sions judge presides or a distenuage with with iboiding pide and munsifs clow him. There are revenue courts resided over by revenue officers, and a below him number of small courts for trying minor (486) All cases I cit iming to family relations covering inheritance, marriage, left in, etc., we judged according to whether the princes are finding. Mostors, or I add that the criminal law, however, until 1347 was part of the Eng juris duction and some but in hes of the Hindu iaw had been prolibited by Eng law the laws of the Hindus and the Mo lems are both of religio is crigin The former is I rived from the Ve ia and its interpre tation the Vela itself being believed to be divinely in pired, but the date of the revelation and the person to whom it was revealed are unknown (See Indian Interature below). The main features of linder the person to the pers Hindu law are the rigid caste system and the inviolability of the family See CASTI Buddhist law is more secular and omits many of the cru ler regulations of omits many of the cru ler regulations of the Hindus with regard to women and the faulty. Mohon medan law is also religious in intent, as Mahomet is believed thave been divinct inspired. The Mchimmedan laws of inheritance prevail in Pakistan and in Muslim disks of the dominion of India, whereby all but a third of a person's projective is distributed out one that descendents in a manner present. an ong his descendants in a manner prescribed by the Koran The proportions of the distribution, however, vary accordng to whether the interpretation followed is that of Hanafa or of Share T. Hana itte code is the more previlent r India The civil judges and magistrates in Indian courts are mostly of Indian nationality, th ic in the higher purts also there is a luge proportion of Indian-

1 Dec visos. The sestem of education which crists in I at the present time owes utscustence entirely to the Brit Gov, but it has always been found to be most successful when, as fir as the natives are enterind in part lasses. There is provided in the arts are held in lombay. Bengal, tital Pross, and it (1943) 14, 11 tes, respectively, Province, Sind, and Baluchistan hers. The high importance of the interview of education in the own peculiar hierature, at a time when its future Europeand Baluchistan hers. The high court of indien literature and education in prot 1948 the for Assam, but the earlier decention in estitutions of E. Furope and W. Asia. The real imput us came from the missionaries, who had

studied the vernacular in order the more easily to continue their work, and who aimed also at the teaching of king, to the natives, in order that they might attain to the culture of the W. After a number of colleges had been estab. in I., the gov., after a long report had been made to them, estab. three univs. one at Calcutta, another at Madras, and a third at Bomhay. This was also accompanied by a scheme of local education which was, in principle, very thorough, and which extended throughout every prov. Schools receiving gov. aid were set up everywhere, and a properly graduated system of education which extended from the elementary school to the univ., was estab. A system of State Scholarships existed by which it was possible for a boy to pass from the vil. school to the univ. There were also state scholarships awarded by local govs. and by the Gov. of I., to enable the holders to study in the United Kingdom for two or more years. In recent years the desire for secondary education and a univ. course was, amongst a certain class, very great; but (1931) in the primary schools less than 5,000,000 attended out of a total pop. of nearly 340,000,000 (1931 census). Some remedial steps were taken and a permanent grant of nearly £4,000,000 was made annually for primary schools. Technical schools and industrial schools were set up all over the country. Engineering, veterinary, and agric, colleges have done much good work, and have been very largely attended.
The returns made in the census of 1931

are as follows:

Literate Illiterate 129,808,571 138,354,143 23,969,7.1 Males Females . 4.169,105

(these figures exclude per-ons aged 5 years (these nightest excitate persons aged 5 years or under and some 3,000,000 persons not enumerated by literacy). The census of 1911 shows a good increase of literates during the inter-census period 1931-11, the percentage of literates being 12.2 (1941) compared with fewer than 7 persons 1021 cent. in 1931.

The total expenditure on education in 1911-42 was £23,145,000 (or Rs. 3,086 lakha).

In the dominion of I. education is undergoing great expansion in accordance with plans for post-war development prepared by the Central Advisory Board of Educa-tion in 1944. It is estimated that these plans, which will modernise all branches of education, will take 10 years to com-plete. An All 1. Council for technical education has surveyed the needs of the country as a whole, and the Central Gov., in co-operation with the prov. govs, has sent abroad some 1400 scholars for higher technical training and research. Reorgan-isation of 54 existing technical institutions and the estab, of 160 others are contemplated in the prov. five-year plaus. Special provision is being made for the training of high-grade engineers and technologists; and the gov. proposes to estab. central higher technological institutes, at or near Calcutta, and Bombay, each with facilities for 2000 undergradu-

ates and 1000 post-graduates. (See also PARISTAN.)
There s

are nine univa.: Calcutta There are nine unive.: Calcutta (founded 1857), Madras (1857), Bombay (1857), Punjab (1882), Patna (1917), Nagpur (1923), Andhra (1927), Agra (1927), and Utkal (1943). There are also five unitary teaching and residential univs.: Allahabad (founded 1887), Lucknow (1920), Dacca (1921), Dolhi (1922), and Annamalai (1929); two denominational univs.—the Hindu Univ. at Benares (1916), and the Muslim Univ. at Aligarh (1920); and three univs. in Indian States—Mysore (1916), Hyderabad (Os-mania) (1918), and Trayancore (1937). At all the univs., except that in Hyderabad, teaching is mostly in Eng.; at the Osmania Univ. it is in Undu. In some provs., secondary and intermediate educa-tion is controlled by Boards; in 1942-43 there were seven of these Boards. Educational institutions are divided and des-cribed as 'recognised' and 'unrecognised.' according as they conform or otherwise to the standards prescribed by the Dept. of Public Instruction. There are approximately, in what was formerly Brit. 1., 219,200 'recognised' institutions with 13,258,000 scholars and 37,000 'unrecognised' with 701,000 scholars.

Broadcasting—All I. Radio is a Dopt, of the Central Gov. which controls broadcasting in 1. There are 9 stations and There are 15 transmitters in operation. also 7 receiving stations in operation at

Bombay, Calcutta, Delhi, Madras, Posh-awar, Dacca, and Trichy. SOCIAL CHANGES IN THE VILLAGE.

Various factors have made for changes in the Indian vil. in the last decade or twoeducation, a period of prosperity or adver-sity, the services supplied by the gov., the army, the motorbus, and the propinquity of a large tn. In the eyes of those who have known I. in the days of the Brit. Raj, the psychological changes at least seem at inst sight mostly for the worse. Many good judges think that litigation has increated; many comment on the increase of corruption, and some, as did Caudhi, deplore the growth of the acquisitive spirit; the spread of the communal virus is only too evident and hardly counterbalanced by the blind desire for freedom. This change has affected all the traditional torms of authority, and is tending to nar-tor the gulf, often still very wide, between these shove and those below. The Hindu villager's simost crazy fear of pollution at the hands of the untouchable is or has been matched by an almost superstitions reverence for the Brahmin. But as the untouchable becomes more human so does the Brahmin become less divine. In the Hindu vil. custe gives degree an added force. But the narrowing of the guif be-tween Brahmin and untouchable suggests that the force is weakening and that caste is relaxing its age old hold on Hindu secrety generally. The two tests are food and marriage. So much weaker now are the barriers due to food that amongst those who accept European ways of life inter-dining is universal, irrespective of caste or creed-though difficulties still remain

where the difference is of both caste and Marriage is a more serious affair. and till recently it presented an almost insuperable barrier to lovers divided by caste or croed. Mairiage is still not com-mon between Brahmin and non-Brahmin, or between followers of different creeds, but amongst the intelligents a the barrier is loss formidable. But in the vil. the food and marriage barriers are as strong as ever and communalism has done nothing to weaken them. The sanction behind caste is a religion so anet, and all embracing that any social change is difficult without its assent. On the purely without his assent. (In the pure) material side there are many changes for the better. The 300 per cent rise in prices which set in sharply in 1912 put more cash into the peasant's pocket than ever before and he wisely used it to pay his debts and redeen his land. For the first time for at least two generations debt was no longer a militone round the pea-sant's neck. Wherever the peasant is prosperous or the fle with the Army was strong change is evident in the sphere of habit and fashion. Thus in dress lighter materials have replaced the heavier mil-made cloth of homespun, silk has replaced cotton, heeled there any ereplaced slippers One gold carring is worn in place of many and the nose-ring and anklet have been renounced. In the house the brick floor is found to be cleaner than the old-fashioned floor of mud plaster. Furniture is more elaborate and cooking vessels more numerons. Some of the girls are even giving up the pictail for the modes of the W. Wiener, in fact, most of the new ways have their origin; as too, perhaps the slackening in religious observance.

Occupations of the Profit.—The great mass of the pop. of I. is occupied in agric, work. This is not to be wondered at in a country where the accidents of birth and bp. combine to make it difficult for the people to do anything other than follow the chosen occupation in a given place. Each Indian vil. is practically self-contained, and as far as possible the gov. provides that the land shall be held by peasant proprietors. The bulk of the pop. lives in the vils., and the caste system tends to crush any natural ambition which a native may have. Further, the differences of race and religion tend to make it difficult for any native to emigrate from place to place as his ambition dictates. The vast majority of the natives are contained in the vila, and are self-supporting. They engage in cattle and sheep breeding and the occupations of the country. material and the implements used are material and the implements used are saually manufactured by the natives in the vils. themselves. The present age has seen, however, a great change come over some parts of I. In the W., for example, large cotton factories have been set up, whilst the menuf. of jute is one of the staple industries of Calcutta. This has necessitated the founding of factories, and both industries have taken a strong hold of the natives. Other indigenous industries are silk-rearing and weaving, shawi and carpet weaving, wood-carving, and metal-working. In Assam and the lands

of the lower Himalayas many of the natives are engaged in tea-growing. Agriculture, however, atili remains, and probably will remain, the greatest of all the industries of I., its most important branch being the tea-industry, which employs about 1.000,000 workers. The development of the scaports and the increased demand have caused a great change to come over the I. that in pre-Brit. days exported only the spices, cottons, fabrics, and other luxuries which the W. demanded. Wheat and rice are exported nowadays in huge quantities; raw cotton, oil, seeds, raw jute, tea, oplum, hides, and indigo are amongst the next most important of all the exports of I, to which can be added manufactured cotton goods, hardware, machinery, lothing, and coal Through the initiative of Lord Limithgow, an E. Group Supply Council was formed during the second World War for the supply by various Empire countries of munitions to the imperial forces in N. Africa, the Middle E, Malaya, and elsewhere. This great scheme of making munitions E. of Suez was based on I. which country thus had an opportunity of securing a large where of malactured extends.

Agriculture.—The total number of the pop. supported by agriculture, including forestry and the raising of ivestock, was secording to the culsus of 1931 about 110 m. In every prov. there is a dept. of agriculture. There are staffs of experts and a central staff, with a fully-equipped central station, research institute, and college for post-graduate training of private students and of those who have completed the agric. course in prov. colleges; a civil dopt., veterinary dept. for the prevention and cure of cattle discuses, and a dairy research institute. Following the recommendations of the Royal Commission on Agriculture, an imperial council of agric, research was set up by the tiov. of L. with the object of promoting agric. and veterinary research throughout L. The production and introduction of improved strains of crops is still the chief feature of the work of agric, depts. although progress in other directions is now evident.

The chief crops and the production in the year 1943-44 were as follows:

Crop	Acres soun	Pield (tona)
Rice	81.117.000	30,664,000
Wheat .	33,961,000	9,741,000
Sugar-cane .	4,231,000	5,848,000
Tea	837,200	1573,773,600
Cotton .	17,427,000	3,626,000
lute	701,000	1.541.000
Linseed .	3,553,000	381.000
Rape and		
Mustard .	5,361.000	921.000
resimum .	4,119,000	447,000
Castor seed .	1,543,000	140.000
Ground-nut	9,808,000	3,823,000
Coffee .	198.000	17.000
Rubber .	144,500	136,684,000

¹ Yields of tea and rubber are given in 1b
2 Cotton and jute in bales of 400 lb.

The following table shows crop estimates (1947-48) for the dominion of I.:

Crop	Area (acres)	Field (tons)
Wheat .	20,207,000	5,316,000
Ruce	59,650,000	18,760,000
Sesamum .	3,701,000	333,000
Cotton .	10,932,000	12,116 000
Rape and		•
Mustard	4.389.000	782,000
Linseed	3,338,000	364,000
Ground-nuts	9,974,000	3,454,000
Maizo .	7,750,000	2,111,000
	1 Bales	

great effort, it is hoped, will yield another 2,000,000 tons of food a year.

The livestock consus in Brit. I. (excluding the United Provs. and Orissa) for 1940 is the most recent available: Cattle, 87,674,800; buffaloes, 22,115,500; sheep, 25,183,000; goats, 30,212,000; horses and pomes, 1,000,900; mules, 40,270; donkeys, 1,1,7,100; camels, 42,600; pigs, 105,100; nultry, 61,128,300 1,955,400 poultry, 61,128,300

The lands under the control of the provent dept. are classified as 'reserved forests dept. are classified as 'reserved forests' (forests intended to be perma-nently maintained for the supply of timber Great benefits have accrued from irrigation, the development of which began a 'protected forests' and 'unclassed'



Indun State Radams

WOMEN RELLING COFTON YARY IN AN INDIAN VILLAGE

century or more ago under Brit. engineers. In the past two decades the Lloyd Barrage (Sukkur) and canals (Sind), the Sutlej Valley and Haveli schemes (Punjab), the Sarda Canal (United Provs.), and the Mettur Dam (Madras) projects have been successfully completed, and a sixth canal, the Thal, is being constructed. The total area under irrigation is nearly 60,000,000

For centuries L's primitive, wasteful farming methods have left her vast pop. at the merry of recurrent famine. The Indian Gov. plans to reclaim six million

forest land. Reserved forests cover about 72,000 sq m. (Central Provs., 19,422 sq. 72,000 8q m. (Central Fraves, 19,722 sq. m.); Madras, 15,620 8q. m., Bombay, 10,23 sq. m., Bengal, 6,935 sq. m., Assam, 6,680 sq. m., United Provs., 5,213 sq. m. Protected forests cover 6,569 sq. m., and 'unclassed' 16,630 sq. m. Total name of forests, 92,157 sq. m. Total area of forests, 95,157 sq. m.

Minerals.—The chief minerals are coal and petroleum. The Damodar Valley in Bihar and Bengal contains the greater part of the coal resources of I., and in quality it is suitable for industrial developat the mery of recurrent famine. The quality this intable for industrial developments from the plane to reclaim six million ment. In 1938 the output of coal was own food. This acreage represents ten per cent of the cultivable land now lying idle and it is planned to reclaim the six million acres within seven years, while (2,743,675 tons), saltpetre, (148,824 cwt.), 4000 tube wells are to be sunk at an outlay of £205,000,000, which will in time be more than recovered from the soil. This illinenite are increasing in importance.

Manufactures.—The chief indigenous in 1941-42 was over 10,000,000. The dustry, after agriculture, is the weaving production of yarn in that year was cotton cloths. Other important indiindustry, after agriculture, is the weaving of cotton cloths. Other important indi-genous industries are silk-rearing and genous industries are slik-rearing anowaving, shawl and carpet weaving, wood-carving, and metal working. These are mostly surviving anet. vil. handicrafts In 1939 there were 10,100 factories subject to the Indian Factories Act, employ ing 1,751,137 persons (including 239,414 women and 9403 children) (no child may be employed for more than 30 hrs. a week). There were in the same year 420 cotton mills in I., including the Indian states, mostly in Bombas and Ahmedabad. In 1939-40 production was 1235 million lbs of yarn and 878 million lbs. of woven goods. Excluding Indian states and gov. factories there were in 1939-40: 106 jute mills (mostly in or near Calcutta). 110 rice mills, 58 tanneries, 150 tile and brick factories, 16 shipbuilding yards or workshops, 1000 tea factories, 110 foundries, 19 fron and steel smelting and steel ace, we from and steel smelting and steel rolling mills, 266 sugar factories, 293 oil mills, 112 motor and coach-building works, 163 tobacco factories, 16 paper mills, 6 breweries, 20 lao factories and 108 silk mills.

The latest available statistics (1949) of mills, factories etc., are given as follows for I. as a whole, but excluding Indian States

and gov. factories -

Industry	Establish- ment	Workers
(1.44.mtt	THETU	
Cotton spinning and	010	400 000
weaving mills .	819	439,000
Into mills	109	301,000
Cotton-ginning and		
pressing factories .	1861	124,000
Railway and tramway		
workshops	97	51,500
Rice mills	1314	48,600
General engineering .	164	16,500
Electrical works .	125	11,700
Printing, bookbinding		
etc	687	31,300
Tanneries and leather		02,00
works	61	11,100
Jute presses	65	11.700
Tile and brick fac-	170	£ 1,1 (///
tories	168	18,200
Shipbuilding and en-	100	10,200
	16	00 400
gineering		20,500
Tea factories	1061	67.400
Foundries	105	6,300
Iron and steel smelting		
and steel rolling		
mills	21	47,600
Saw mills	64	5,600
Petroleum refineries .	1	2,600
Woollen mills	15	9.200
Sugar factories	330	86,000
Stone drewing	11	100
Oil mills	291	16,600
Kerosene tinning and		,,,,,,
packing works .	36	5,700
Motor works and coach		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
building	117	8,000
Tobacco factories .	171	22,500
Paper mills	117	10 000
Lac factories	22	10,000
		2,300
Silk mills	112	5,500
With regard to coi	iton spine	ing and

1093 million lb.

FINANCE.—By the system of decentralised finance initiated by Lord Mayo in 1870 the Central Gov. assigns to the prov. govs. a fixed share of the revenue collected by them under specified heads. result of the Montagu-Chelmsford reforms the finances of the Central Gov. and those of the provs. were almost completely separated, the provs. retaining all income from land revenue, irrigation, excise, stamps etc., while the Central Gov. had the income from communications and income tax. On the introduction in 1937 of prov. autonomy, there was a further change, and from April 1 of that year the proves, have had a definite share of the proceeds of income tax; and a prescribed share of the proceeds of the excise duty on jute is assigned to the jute-producing provs. Some of the prov. govs. receive ann grants-in-aid from the Central Gov. and a share of the additional duty on imported alt. The Central Gov. bears all expenditure on defence while the prove are responsible for the charges of their own services and also for expenditure on famines. The prove, govs frame their own budgets, can raise loans and impose additional taxation.

Land revenue is the oldest and the most important source of revenue. It is levied according to an assessment on estates or Bihar, and Ort sa, and in Some dists, of Madras, and in Agra and Oudh, the assessment was fixed permanently at the end of the eighteenth century, while it is fixed periodically at intervals of from 12 years to 40 years over the rest of I. The gross land revenue in 1943-44 was nearly £23,000,000. Opium is a declining, though still large, source of revenue. In former Brit. ter. the cultivation of the puppy for opium is confined to the United Prove , though owing to war requirements, the area under poppy was increased there. Opinm is also produced under special supervision in the Central Indian. Rajutana, and Gwallor States; and it is bought in its crude state by the gov. at the darace. In 1926 the Gov. of I. announced its intention to restrict export south for medium languages and over the control of the control of the control of the control opinion opinion opinion of the control opinion opini except for medicinal purposes and exports to foreign countries coased at the end of 1935. The gross revonue in 1943-11 was about £600,000.

The first budget (dominion of I.) presented to the Dominion Constituent Sambly (Feb. 1948) showed a total denert of Rs. 268.5 million (£20*) million. After a contribution of Rs. 45 million from the rallway surplus and new taxes the remaining deficit of Rs. 100 million (£7.5 million) was covered by taking direct to reve ue the advance payments building 117 8,000 direct to reve ue the advance payments of corporation as, leaving a final deficit Paper mills 17 10,000 Lac factories 22 2,300 Silk mills 112 5,500 With regard to cotton spinning and weaving, the number of spindles in all I. heads: customs, \$1.75; central excise, Value, in

thousands

Exports

34,00; taves on income, 92,13 Estimated expenditure, Rs. lakhs 2,57,38. Chief heads: defence services (net), 1,21,03; debt services, 41,16; civil administration, 31,56; total revenue, 4176,265,000; expenditure, £193,035,000.

Budget estimates of prov. govs.: (1948–49): Madras: revenue, Rs. 55,94; expenditure 55,94; Bombay, 11,38 and 44,02; W Bengal, 31,19 and 31,97; United Provs., 45,97 and 50,57; E Punjab, 11,13 and 17,82; Bihar, 21,57 and 20,09; Central Provs., 15,75 and 15,74; Assam, 13,12 and 14,61; and Orissa, 6,32 and 7,51. "Potal, revenue, Rs. lakhs 242,77 (£132,077); expenditure Rs. lakhs 242,77 (£132,077); expenditure Rs. lakhs 258,27 (£193,702).

Expenses and 19Ports — The following tables give the foreign titude of I in 1914-

tables give the foreign trade of I in 1914 45 (values converted at R- 131 to E1).

Experis	cumentum s
	of £
Jute, raw .	5,625
Jute, manufactured	15,318
Cotton, raw .	5,776
	0,179
Cotton yarn .	9,472
Tea .	29,548
Seeds .	7,900
Hides	6,218
Metals and orc⊲	1,075
Wool and woollens	1,223
Lac	3,560
Milk .	2,103
Fruite .	3,444
	729
Coir goods .	836
Spices	
Rubber (crude)	. 952
Dyes	376
Hemp	523
Coffee	194
Tobacco	723
	, -, -
Imports	
Cotton yarn (and minutar tured	2,739
Cotton, raw	18,000
Grain and pulse .	6,009
Mineral oils	60,527
Machinery	. 12,225
Iron and/or steel	2,672
	6,712
Other metals .	2.146
Motor cars and other vehicle-	. 1,334
Chemicals	7,606
Paper	2,191
Instruments, electrical	1,946
Dves	5,012
Provisions	9 019
Spices	1,154
Wood and tunber	17
Hardware	2,767
Wool and woollens	7,864
	7,007
Idania	812
Rubber (manufactured)	1,091
Tobacco	2,177
Glasy	418
Seeds	1,084
Tea chests	1,129
Quarry products .	4,053
American Security Color	7,000

On the basis of the trade returns for 1944-45, 6, 34 per cent of Indian exports went to the United Kingdom and other parts of the Brit. Empire, and 34 68 to bereign countries. The United Kingdom took 29.24 per cent of these exports,

Ceylon, 9 08 per cent, Australia and New Zealand, 8 60 per cent; and the United States of America, 21 22 per cent. Brit. unports accounted for only 38-81 per cent of the total imports as against 61 19 per cent for ioreign countries. The 61 19 per cent for torsign countries. The Inited Kingdom sent 19 99 per cent of the total imports and Australia and New Yealand 11 per cent; while the United States sent 25 17 per cent, Persua 21-53 per cent, and Egypt 8 65 per cent. The total imports into the United Kingdom from 1 in 1945 were valued at 466,410,000 and expects to India from the United and exports to India from the United Kingdom were \$33,151,000.

In 1939-39 the number of ships engaged in the foreign trade which entered and cleared with cargoes at ports in Brit. I. was 7140, with a tonnage of 19,091,691, nearly 70 per cent of which was under the Brit flag The tonnage of vessels which Isrt flag. The tonnage of vessels which ontered with cargoes in the interportal trade of I was 13,764,794 tons in 1949-40 and cleared 13,517,322 tons. The number and tonnage of vessels built or first registered at Indian ports for 5 years, 1936 10 was as follows built, 213, registered, 284; tonnage 8996 and 35,970

respectively.

CURRENCY .- The monetary unit of I. is the Indian Rupee, the sterling equiva-lent of which is 14 6d. The coins in circulation are: silve, 1 rupre, equivalent to 16 annas; 1 rupee or 5 anna piece; 1 rupee or 4 anna piece; nickel, 1, 1, 2 and 4 anna pieces; bronze, 1 piece equivalent to Jamin, I pice equivalent to Jamina; I pice equivalent to Jamina; I pice equivalent to Jamina; I pice of pice. The paper currency consists of Peserve Bank notes in denominations of Rupees 2, 5, 10, 50, 100, 500, 1000, and 10,000 A 100,000 rupees is called a lakh and is written thus: Rs 1,00,000; and one hundred lakes is called a crore and written. Rs. 1,00,00,000. A lake of rupees when the rupee is 1s. 6d. is equivalent to £7500.

COMMUNICATIONS—The development of the communications of I have had a very marked effect upon the increase of trade. The improved system of roads, the increased use of the natural and artiherd waterways, and the building of good and reliable railways have been of the greatest importance to industrial I. The great the are linked together by good roads which are utilised for short distance traffic and even for places some hundreds of unles distant. The rive, especially the Ganges, the Brahmaputra, and the Ira-wad, are used by the natives to take the produce of the interior to the scaports. whilst the canals also are well utilised.

Raduons - The most important development of all, however, is that of the railways I and Cevion are connected by All the combined ral and steamer ferry large this, are linked up together, this having been done by means of good trunk are now used for purposes, and they are now used for purposes of trade. Every dist. of I is served by a railway, and the thinly populated dista. have specially narrow-gauge light railways. Nearly 700,000 men are employed, and the whole system was thoroughly overhauled before the First World War and linked up

properly. Before partition, almost the whole of the Indian railway system was owned and worked by the Central Gov. There were some lines of minor import-There were some lines of minor importance owned by companies, some of which were operated by their owners and some by the Gov. There were also lines in which Indian states and dist. boards were interested. The mileage open for traffic (on March 31, 1945) was 40,509—about 50 per cent on the standard gauge (5½ ft.) and 42 per cent on the metre gauge. The net carnings of the railways in 1944-45 were about \$62,865,000 and the contribution paid from railways to general revenues was £24,000,000. On Aug. 15, 1947, 10,524 m. of railway were divided into two portions: 6659 m. of line in Stud, N.W. Frontier Prov., W. Punjab, and E. Bengal were allotted to Pakistan, and the rest, comprising 33,865 route m., to I. rest, comprising 33,865 route m., to I. Locomotives were so divided as to ensure Locomotives were so divided as to ensure that each section had the type suited to its operational requirements. About 73,000 employees operated for Indian Railways after partition. At the end of 1910-41 there were over 102,000 m. of telegraph line carrying 528,000 m. of wire and 1500 m. of rible There are over 9200 telegraph one step over 9100 telegraph one section for paid traffic in I. and over 24,000 post offices in the country. After 1947 there were twenty-three civil aviation companies with an authorised cap, of Rs. 42.2 crores. Air services were operated in 1947-18 on

services and forty-two weekly. The wireless stations, maintained by the Indian Posts and Telegraphs Dept., numbered twenty in 1940, of which five were coast stations available for general public correspondence and the remainder inland. The same dept. operates the telephone system, though exchanges have also been estab in Calcutta, Bombay, Madras, Karachi, and Almedahad by

twenty-two routes covering 13,295 route in, by eight transport undertakings using 166 aircrew personnal. M. flown were 4,648,000, and traffic carried, eight million

tons. The number of passengers flown was 136,800. There were sixteen daily

companies under gov. licence.

Ports,—The chief seuports are Bombay. Calcutta, Karachi, and Madras; lesser ports are Port Blair (Andanans), Calicut, and Trivandrum (Madras), and Surat

DEPENCE. - The partition of I, involved a div. of the armed forces between the two dominions on a territorial basis, and the result was a div. in the proportion of one-third to Pakistan and two-thirds to I. The anned forces of I. formerly contained a substantial Brit. element, but I. decided to nationalise her armed forces and only a small number of Brit. officers, mostly of the technical and specialist arms. mostly of the technical and specialist arms, were retained. After partition, regiments and formations of the Indian army, which for many years had consisted of sub-unit-comprising men of various castes and creeds had to be reorganised into regiments.

reduction in the strength of the Indian and reduction in the strength of the Indian and Pakistan armies amounted to 1,648,772 men and women. Of these 32,677 were Brit. and Indian Pakistan officers, 12,177 were officers and auxiliaries of the WAC (I), 49,024 were Brit. other ranks serving with Indian and Pakistan armies, and 1,335,570 were Indian and Pakistan ranks, including 64,321 civillans attached to the two armies. A total of 8668 army units were dishanded, sixty-one Indian units were dishanded, sixty-one Indian units were disbanded, sixty-one Indian State Forces units returned to the States. State Forces units returned to the States, and cleven Nepalesse contingent units returned to Nepal. The old Indian Army prior to Aug. 1947, was divided into three Commands—Northern, Southern, and kastern. A fourth, Central Command, was raised during the war and dishanded when it was over. Of the Indian divs. which took part in the war eleven were dishanded, leaving three infantry divs., one armoured div., and one airborne div. On Aug. 15, 1947, the army was divided into the Indian Army and the Pakistan Army. The N. Command was allotted to l'akistan and the S. and E. Commends to I. A new Command, Dethi and E. Punjab Command, was formed soon after Punjab Command, was formed soon after-ward. There has also been a considerable expansion of transport services. Other additions to the services were tank trun-porters, amphibians and sev. water transport companies. The army of Pakistan comprises six armoured corps units, eight and a half artillery regiments and thirty-four engineer units. Most in-fantry regiments of the old Indian Army with a Muslim majority were allotted to Pakistan after partition.

The Royal Indian Navy traces its hist. unmerruptedly from the early seven-teenth century when the F. India Com-pant's Marine was formed. Formerly styled the Royal Indian Marine, the service was reorganised between the two world wars on a combatant basis. In 1928 it hoisted the White Ensign for the first time and in 1934, following the passing of the Indian Naval Discrime Act, was redesignated the Royal Indian Navy. As a result of partition the navy was divided between the two Dominions. To divided between the two Dominions. To 1. went 4 modern shops 2 frigates, 1 corvette, 12 minesweepers, 4 trawiers, a survey ship, and some auxiliary vessels, with a personnel of self-of whom about torty-live are Brit.) officers and 5500 rangs. Indianisation of the navy will be completed in 15 years. A large naval estab is being constructed in Cochin (ii M.I.S. Venduruthy) which will include specialist training facilities in gunnery, communications, n wigation, torpedo, initsubmarine, cleatrical, and radar branches. The Pakestan navy consists of two sloops, two frigates, four minesuccepers, two trawlers, two motor mine-

launches.

The Royal adian Air Force had its inception in the recommendations of the for many years mad consisted of sno-units inception in the recommendations of the comprising men of various castes and skeene Committee in 1926, and in 1932 creeds had to be reorganised into regiments the Indian Legislature passed the Indian containing only representatives of their in Force Act, the first flight being formed own dominion. From the end of the ithe following year. In 1946 it consecond World War to Aug. 1947, the not sisted of nine fighter and two transport squadrons with modern aircraft. On partition seven fighter squadrons and one transport squadron were allotted to I., and two fighter squadrons to l'akistan.

Indian Army (1857-1917). After the Mutiny of 1857, and when the Indian empire was taken over by the crown, it was decided that the European army in I. should be analgamated with that of the drawn Formula in the days of the the crown. Formerly, in the days of the E. India Company's control, the army was organised on a presidential basis, a staff organised on a presidential basis, a vitil oorps being formed in 1861 for each of the Presidencies. This system for a time worked well, but finally the old presidential system of organisation was done away with, and the whole Indian Army was reorganised under the command of a single commander-in-chief. The staff corps became the staff of the Indian Army, and the basis of organisation was one N. and one S. command, together with a separate command for Burma, all under the control of a commander-in-chief of the Indian Army. Previous to this, and during the gov. of Lord Dufferin, the incident usually known as the Penjdeh scare (over the Russian occupation of that and another place in Afghanistan) took place, and led incidentally to the formation of the Imperial Service Corps. princes of I. volunteered to give pecuniary aid to the gov.; this was at the time rejected, but they were later informed that a proposal to place a certain number of native troops in each state at the disposal of the gov., to be trained, drilled, and officered by Brit. officers, would be welcomed. This was done, and gave rise to the Imperial Service troops, whose value and efficiency were tested and proved. In 1939 the defence forces of I. comprised In 1939 the defence forces of I. comprised units of the Brit. Regular Army (60,000), the Indian Native Army (140,000), the Indian State forces (about 35,000), the Auxiliary Force (about 24,000), and the Territorial Force (18,000) For police duties and frontier service the regular military was supplemented by frontier militiar and local levies The military forces were organised as the N., S., E., and W. Commands, and the Burma Independent Dist., there being a number of pendent Dist., there being a number of dists. and independent brigades in each command. The Field Army was organised in four divs, and five cavalry brigades. The Brit. Regular Army in I was paid by the Indian Exchequer and was organised in divs. and brigades with the Indian (Native) Army in the proportion of one Brit to three Indian battalions. The Artillery Corps at this time was 13,000 strong, organised into one field and six mt. regiments besides various small units—altogether a score of pack batteries and a number of field and garrison artillery batteries, the latter with a proportion of Indian drivers. The tank corps units

Territorial Army of Britain, was intended to be a second line replica of the regular army in time of war. The Indian State army in time of war. The indian State forces were raised and maintained by the Indian States and trained under the supervision of Brit. officers. In the native army the composition of the regiments was very varied indeed. The troops constituted was very varied indeed. sisted of then of all races and religions, and these varied naturally with the position of the command. In the ranks of the native army in I. were found Pathans, Sikhs, Punjabis, Mahrattas, Hindus, Gurkhas, together with representatives from almost every race to be found in I. The terms of enlistment were general, and although the native troops had not, up to 1939, ordinarily served overseas, nevertheless they enlisted for service within or without the Brit. empire, and could be or without the Brit. empire, and could be taken over-cas if necessary During the First World War, 1,215,000 officers and men of the Indian Army were sent on service overseas from I., the number of Indian troops being 570,000. The total Indian casualties were over 158,000 (deaths, 73,132; wounded, 84,715). Between the world wars some native units served in Iraq and at colonial stations, their pountagement below determed by the their maintenance being defrayed by the Brit exchequer. The intantry and cavalry of the old Indian Army were organised into double companies, each commanded by a Brit, officer, together with a Brit, junior officer. The native officers, risaldars in the cavalry and subandars in the infantry, issued all orders to the native troops. The senior officer was called the risaldar-major, whilst to each half company was usually attached a junior native officer, who was called a jamadar. A reorganisation of the Indian Army was begun in 1921 to meet defects brought to light in the 1911-18 world war. This consisted of grouping regi-ments for training purposes, and in 1922 the system was carried a stage further by converting the groups into regiments in the case of the Indian infantry and Pioneers. The chief reform, however, was that of 'Indianisation,' i.e. having units officered entirely by Indians and without any Brit. cadres. The Indian Territorial Army was also Indianised (see Territorial Army was also Indianised (see The Army in India and its Evolution, 1924, Issued under the authority of the Gov. of I.). In the Second World War the Indian Army fought in Burma, N. Africa, Italy and the Middle E., winning over 5000 awards including thirty-one V.C.'s—an Empire record surpassed only by the Army of the United Kingdom. Exclusively recruited on a voluntary basis, the strength of the Indian Army at its peak strength of the Indian Army at its peak was 2,250,000, a feature of this expansion being that of the Royal Indian Artillery, which was increased to \$1,000 all ranks, and consisted of twelve int., eleven field, seven anti-tank, two medium and twentyconsisted exclusively of Brit, personnel, nine anti-fank, two medium and twenty-free was organised in 1920 as a second line to the permanent partison, and was formed by voluntary enlistment of men of Brit. extraction.

The Territorial Force, also organised in 1920, was a militia force, and, like the missing, 11,754; wounded, 64,351; and 79 189 prisoners of war, chiefly on the Burmese front) By Sept 30, 1946, in the process of demobilisation over a million men had left the service the ultimate peace time strength of which had not been finally determined when the partition of I consequent on independence involved the complete reorganisation of the armed forces of I and also the dis

appearance of the old Indian Army
Royal Indian Navy—In 1926 it was
decided to establish a Reyal Indian Navy on a combatant basis the nucleus of which was to be provided by the former Royal India Marine. This navy at the close of the Secont World War, included six modern slops, three frigates, two corvettes sixteen minesweepers a survey areal and six modern slops. vessel and six modern traveles There were also a number of auxiliary vessels In 1946 navel strength was reduced by demobilisation to 1000 efficers and 10 000 ratings It was decried in the same year

ratings It was defined in the sum of the to purchase three causers from the Royal Navy for the Royal Indian Navy Rigal for I re of India — Had its beginnings in the Indian Air Force Act (1932) the first flight being formed at karschi in 1933 March 12 1941 the King approved the design thon of Poyal n recognition of the wat services of the force. In 1946 it consisted of eight fighter and two transport squadrons with modern aircraft I or the division of all the armed forces on the partition of the

country see Defence

The Indian Princes (before the Pirition of India)—The Indian States numbered 62 of which 327 were relatively of very little consequence and only existed inde-pendently as the result of a historical acci-dent. The chiefs on the Afghan frontur acin a different cat gory compared with the Princes of I all being Mosleins with a piliteal grivitation towards Kabul and not to Delhi and as regards their internal administration they were to all intents and purposes independent. There are only seven of these border States vary ing in important fr in that of the khan of kalat with a will is darid int country of 75,000 a m in Baluchistan and a pop of 305,000 to the small state of Phulera on the Hazara border with an are t of old a m I wo of the chiefe the Mehtar of Chitral and the Kh in of Kalat, have the title of His His bics and a silute of guns. One of the most important is the new state of Swat founded in cem his new hour of swat founded in the practively recent years by a descendant of Ahkhun I of Swat on the Peshawar border. Nepal is an independent state but it is not and never has been an Indian state From the mt mass of the Pannis and Karakotam in the N where political I imping a on central Asia to Cape comorin in the S a distance of 2000 m it was possible to travel almost entirely Implinate on central Asia to Cape in the surge of Valsin invasion I maded comorn in the 9 a distance of 2000 m it was possible to travel almost entirely through ter of the Indian princes without to their fauth. But although the touching Brit I from Chitral (which was a Brit Protectorate) one would pass through Gligit a dependency of Kashmir, thence the route would lie through small Rajput States in the Himalayas, past Simla to the Sikh State of Patisla in the medials prevailed until Clive's victory at Plussey in 17.7 for the first four Punjab plains, a country of prosperous at Plasecy in 17:7

vils and stalwart fighting men, thence vills and status in guiding men, thouse to the devert of Rajputana home of the blue blooded Rajputs and memories of ant chivally, then on to the sphere of the Marahas in Baroda and Indore secular rivals of the Rajputs Thence into the great Muslim state of Hyderabad and Indore the Classe Britain and then e mal in area to Great Britain and then to livancore with its unrivalled beauty of for at lands and lagoons, and so to the Conorin, fabled abode of the god der Kumari In all the Indian states court desone two fifths of the whole of I and contained more than one fifth of the pop Their subjects were Bit pro tected persons, not Brit subjects, and they were governed by hereditary rulers under the surcrainty of the Brit Crown In the administration of internal affairs the authority of the Princes was limited by truty relationships with the Para mount Power (Britain) and by usage and sufference Brit Indian law did not privail nor could the Central Indian legislature legislate for them The Prin cs had no relations, however with the Stat wate now either nierged in Provs of I r lakistan or have been integrated in groups or unions so that very few preserve their old identity

he manner of evolution of this type of auton mous or semi autonomous lingdom is a problem the solution of which is luried in antiquity. Originating in Hindu plitical theory it has certainly been in it an ed by the Brahmine il caste system which is at least 3000 years old. This is me of life harmonised best with a government of the case in the case. in which the ruler administered a small ter with the assistance of a durbar or comil of ministers priests military fuditories and representatives of the at or guild. This durbar rule is best f uditories and the durbar rule is ossillutrited in the more and Rapput ates of Central I and the couse of the grid Indian Desert some of these being the illing origin. States ille the Rapput to illing origin. tri malities and some of the lier states in the -- Mysore Iravaneers and Cochin - wed their centimics of existence to the il support of their nobles and peasantry i is up or to the cooler and peasantry i obtain a clear view of it position of that ites in the political fabric of I of the last they must be seen in historical I is tive. The long drawn tragedy of its is in the crash of empires and king of the bitten us of clipices and king of the bitten us of religious feuds, are ricted in the evolution of I's minor lightns' (Sir Wm Barton) Hindu I in the touth to eleventh centuries was friends out to a point in having found

w defenders in the age of terror that was thin impending. But for the Rapputs the lumin would probably have been lost in the surge of Musica invasion | Unaided I or the first four

centuries of Muslim rule the chief opponents, the Rajputs, short of man power, could not for long keep the hold. Refusing, however, to admit defeat, they fled to the oasis of Rajputana, into the tistnesses of the central plateau. No of the Yindhiyas and to the peninsula of Kithi war, and there they set up small kingdoms most of which late became fiels of the great Mogal Empire. On the central plateau many of the smaller Rajput barons, however became fendatories of the Muslim kingdom of Malva. The resist ance of the Rajput rules preserved the culture traditions, and religion of the Arvan age. Most of them have survived the storms of conturns and form the bulk of the Indian States of to day proving the vitality of the point al systen they are

body (see Sir van India, 1934)
The rulers of Indian States have not necessarily any religious or tribal con nection with the majority of their ub-jects, thus, the Nizam of Hyderabad is a Moslem, yet most of his subjects are Hindus. The salutes accorded the Princes indicated their relative import ance Princes with a salute of eleven guns and more were addressed as His Highness Yet some well known Indians of title, such as H H the Aga khan (q 1) and the late Mah reach of Burdwan, are not ruling chicis. The (hamber of Princes was estab in heb 1921 as a permanent consultative body on matters affecting the State generally, or both them and Brit I, or the kimpire as a whole In 1947 it consisted of over 100 rulers of States who were members de jure, and twelve rulers elected by 127 Arising out of the Montagu other States Chelmsford reforms most of the states were in direct relations with the Gov of I In recent years the policy was pursued of promoting co operation in such matter, as justice, police, and public health. In 1943 an extensive scheme was launched for improving the administrations of hundreds of petty States in W I by attaching them to large neighbouring states such as Nawanagar and Baroda

Nawanagar and Bardoa
History — In a country of the orea
the pop, and the diversity of language and
race such as I, not unnaturally but he
comes a matter of some complexity and
difficulty, and it is only with the widest
movements that this sketch of the hist of
L, is concerned Indian hist, for all
practical purposes, because with the first
invasion of I by the Arvins, who came
from the VW and who inted for some
time on the slopes of the Himalavas
before they finally entered the great Indo
Gangetic plain and drove back the
Dravidian pop into the real pennsula to
the S These invaders had a settled
system of civilisation and a fixed religious
system They were well acquainted with
the various arts, and above all they
brought with them the Ing Veda, the
Hindu hymnal that estab, the antiquity
of their origin (see also Religiou above and
INDIAN LITTERITURE and ART, below).
They formed states in the great plain, and
they built great thus., the sites of many

of these remain down to the present day $(e \ q)$, Benares, Aryan Baranesi) Phoir social system divided them definitely into four divs the Bighmuns, or the priests, the Kahatrigas, or nobles the Varsigas, almost the modern middle class, and the sudris, or self class composed principally of non Arvan peoples who were the slaves of their conquerors. Gradually the civili or their conquerors. Common the frains stinn and the religion of this people became corrupted and about the year 500 B c three h cd the great reformed Buddha (t).) At the same time occurred the rise of Jamisin, a religion which was a family by the bary table to the bary table process. founded by Vudhamana Mahavan, and has often been regarded as an off shoot of Bu ichism But Buddhism never super sede I at rely the older futh of the Hindu, the fight man which had been intro-duced with the coming of the Aryans and although for a time Buddhi m appeared atthough for time random in appeared to have gained the upper hand, ultimately the original religion became the more prominent. It is with the invasion of Alexan let the Great (2n) that the real hist of I with relation to the outside world may be said to begin Alexander's campuch was confined however to the Punj ib and to Sind and ofth meh he made no d inite settlement we know that he planted cities and left (k garrisons behind him. On his death I passed to Selicus Chandragupia I mperor of I F of the Indus was contemporary with Selicus I he two I mprove made an alliance, and for a time the relations between the Gk and the native kingdons were well estab

As it ords grow more certain and contin icus, they tell of periods in which great indian dynasties acquired power over a large part of I Thus, there are the Maniya I mpire (r 321-184 Bc) with Chindragupta and Asoka as its out standing rules and there is the Gupta I mpire (c Ap 120-500) the golden age of Hindu culture. But none of these I manifest standing over the whole of I I mputs extended over the whole of I, and beyond their borders princes and chicfinns powerful and weak were in constant rivalry and stiffe. Our know-ledge of the system of goy of Chandraguitt is due to the fact that the ambas sort to his court by belongus, Megas-theme, wrote an account of the court, go, and multitudes of I. The grand-on of this great king was 1saka the champion of Buddhism I rom the inscriptions and rock edicts which Asoka caused to be plus d throughout his emplie we learn that he ruled practically the whole of I with the exception of the extreme 4 of the peninsula During his roign Buddhism be and the predominant religion but after his death, the emple began to decay, and mar the beginning of the second cen-tury nor the Maury as dynasty came to an end I wo other dynastics may be here noticed the Sunga and the Andhra, but of neither is very much definitely known. The Gk provinces of I had in the meantime become independent kingdoms under Gk rulers, and in the middle of the second century a c the W Punjub became for a time part of the Parthian empire

In the middle of the second century

B.C., tribes from Central Asia began to myode I. The first of these was known as the Sakas, who estab. themselves W. of kandahar, and gave to the country the name of Sakastan. Another was the Kushan, and in the first century A.i. the chief of this tribe estab. a great kingdom in the N.W. of 1. The empire of the Kushans does not seem to have come to an end until the beginning of the fourth century of the Christian era, when the Gupta dynasty was catab,, and almost immediately began to prosper. It was founded by a second Chandragupta, who extended his kingdom along the valley of the Ganges, and was increased by his sou, Samudrigupta, who conquered all the provs. of the (larges, and estab, lamself in Southern I, as well. Under Chandra-gupta II, tresh additions were made to the empire, but finally, about the year 480, the Huns from Central Asia broke up the empire and estab. then selves in Northern L. But at the beginning of the sixth century. the Huns were beaten by a Gupte king. The last native prince of Northern I. was Harsha, who ruled with a strong hand the

whole of Northern I.

After the death of Harsha, the hist. of is a confusi a a aversties and kings, whom it is impossible to mention in detail. But gradually in Northern 1, the provinces began to find some shape and form under the gov. of the Rajputs, or members of the rubug families. At the end of the muth century the most unportant king-dom was that of Panchala, whilst the Pala king- ruled in Bengal, and another in portant dynasty was that of the Chamel. portant dynasty was that of the Channel. Until the end of the third century the Andhra dynasty juled the Decean, and this was succeeded by that of the Chai-ukya Rapputs, which lasted until the beginning of the seventh century, and was then merged in the Chola dynasty. Early in the eighth century Arab armies con-

The close of the tenth century witnessed the beginning of the locursions of the Muslims. The great Moslem empire originated in the setting up of two small independent Moslem states in the N. of I. The founders of both these states were originally slaves, and they were bitterly opposed by the Ralputs. In 987 the Sultan Mahmud of Glazni ascended the throne of the Amir of Sabuktigin, and commenced a holy war against the inhab, of I. In a great number of campagns he gradually increased his power until it extended practically to the Decean.

Dynasty after dynasty settled themselves Dynasty after dynasty settled themselves at Delhi, and gradually spread into the Doccan itself; amongst the Moslem states formed in the Doccan, the more important ones were Golconda and Eugapur. The beginning of the thirteenth century vitnessed the incursion of the Mongol chieftain, Genghis Khan. The Mongol chieftain, Genghis Khan. The Mongol bands however, although they strained

Central Asia of Timur the Lame (usually spoken of as Tamerlane), who swept all opposition before him, and after perpetrating a fearful massace before Delhi caused himself to be proclaimed emperor of 1. Between 1000 and 1500 a succession of Afghan invaders drove right across North I. Moslem dynasties ruled at Delhi from the Punjab to Bengal; and the new conquerors pushed farther S. than any of their predecessors. Five separate Moslem Kingdons were set up in separate Moslem Kingdoms were set up in the Decean. Only S. of the riv. Cauvery was flindu I, saved from the invader. Flindly, from 1505 onwards, over the same N.W. passes, came the Moguls. At the beginning of the sixteenth century, however, appeared the greatest of all the conquerors of 1, in the person of Baber. He was a Mongol descended from Taimur and Canghis Khun. In the year 1526 he defeated the army of the Sultan Ibrahim in a battle fought to the N. of Delhi, and was proclaimed emperor of 1. From this interest discounted, at least nominally, from the who ruled, at least nominally, from the time of Baber until 1707. For a time belai alone remained in the hands of the conqueror, but gradually the whole of Northern I, was conquered. The greatest of all the Mogul emperors was Akhar the Great (15:6-1605), to whom the whole of I with the exception of the very S, owed allegance His legal code, the brilliance of his court, and the magnificence of the arcentecture of his reign are all worthy of note. Akbar was far more liberal in the n after of religion than the contemporary soccielens of kurope; but for one reason or another multitudes of ludians, especially in the N., accepted their Moslem con-querors' creed; and so 'beneath the sur-face or unity the soul of 1, was divided between two futtes or two philosophies of life a gulf which seems to-day almost as deep as when it was first cut so long ago isn R. Coupland). The last of the great Mogale emperors was Aurungable, who died in 1707 marking the final break-up of the Mogul empire, on whose mins the balantias formed an empire which was the greatest and most important in I. in the middle of the eighteenth century. On the break-up of the Mogui empire, the following practically independent states s; ranginto existence, that of the nabob of Outh, the nizam of Hydersbad, the nabob of the Carnutic, and Hyder Ali at Seringa-patum. Little by little the provs. of the Mogal empire fell away from their allegi-ance. The Decean became independent. one. The Decean became macpearant, that followed suit. Rengal, Behar, and Oussa, though nominally still dependent, whom's and purpose inbecame to all intents and purposes in-dependent. A general revolt of the provs. took place, and to make the coninsion worse confounded, a foreign invader in the person of Nadir Shah, Shah nesses the incursion of the Mongot stater in the person of Nadir Shah, Shah chieftain, Genghis Khan. The Mongot of Persia, appeared in the land. The hordes, however, although they attained considerable power in the N.W., were, and they were now the greatest power in nevertheless, unsuccessful in their attempts to penetrate into I. itself, and by descendants of the Mogul dynasty; but these attempts were beaten back principally by the Moslems of Northern I. nominal kings. The shah, having plundin 1398 came the great invasion from ered Delhi, returned home to Persia, and I. was again free of foreign invaders. Nevertheless, she was now but a conglomeration of independent states. The Punjab was annexed in 1761 by the Mahrattas who were finally defeated by a coalition of the Muslim princes in 1. who

feared the growing power of the Hindus.

The first European settlements and the power of the British in India.—Europeans had for a long time known of the existence of the trade route to I. via the Red Sea, but the estab. of a Muslim power in Egypt had effectually closed that route to trade, and the result was that it had been necessary to seek some new way of approaching I. Towards the end of the afteenth century many attempts were made to double the Cape, and finally the task was accomplished by Vasco da Gama. task was accomplished by Vasco da Gama, who arrived by that route at Calleut in 1498. After this, the Portuguese made many settlements on the W. coast, the most important of all being Goa. But towards the end of the sixteenth century power in the E. began to pass into the hands of the Dutch. The Portuguese was driven from Caylon and the Dutch. were driven from Ceylon, and the Dutch also estab. themselves firmly in the Malay Peninsula. The next great struggle which ensued was that between the Brit. E. India Company and the Dutch. The latter were inally driven out of I. altogether. England first appeared to claim a share in the spoils of the E. in 1600, when she obtained a chatter for her E. India Company (q.v.), and her first factory was estab. at Herat in 1608. Trade, and trade alone was the E. India Company's objective; and trade, moreover, obtained objective; and trade, moreover, obtained by peaceful enterprise and agreement, not by force. The Company's first act was to send an envoy to the Mogul Emperor at Delhi to secure his permission to establish a trading-post on the coast. The envoy was followed by a full-scale ambas., Sir Thomas Reo (q, n), whose title to fame is founded on his formulation of the Company's polloy which was not to to fame is founded on his formulation of the Company's policy, which was, not to waste money on military adventures or in acquiring ter., but to 'seek profit at see and in quiet trade.' (P. E. Roberts). In 1639 the site of Madras was bought, and in 1661 Bombay passed as the dowry of the queen of Charles II, into the hands of the Company. In 1690, after many failures, a settlement was made on the Hugil, which developed into the city of Hugli, which developed into the city of Calcutta.

The Fr. appeared in I. later than the Eng. A company with somewhat similar objects to that of the E. India Company was founded in 1664. Their most important settlement was at Pondicherry, which they retain even to the present day. Although, as will be shown, they made a great struggle for political power in I., they falled very largely because of the lack of interest of the home gov. By the time of the collapse of the Mogul Empire the E. India Company had acquired three prin. trading posts—at Madras, Bombay, and Calcutta; and, in order to protect and Calcutta; and, in order to protect
these posts from pirates and from European rivals, forts were built and bodies of
Indians known as 'sepoys,' enlisted and
in a state of flux. The first results of
drilled under Brit. officers. The life Brit. conquest in the eighteenth century

struggle for supremacy in I. between the Fr. and the Brit. commenced during the War of the Austrian Succession (1740 48). During this war the Fr. had been the more successful, and had, in fact, captured Madras. The treaty which ended the war, however, ordered the restoration of all conquests, and so Madras ugain passed into Brit. hands. With the outbreak of the Seven Years' war (17.6-63) rivalry between France and England was renewed. A series of succession questions in the Decean had given both a pretext for joining in the native quarrels, and now the attention of the Eng. commander, Clive, was called from the Decean to the N. The succession of Surajah Dowlah to the throne of Bengal had brought about the throne of Bengal had brought about the Black Hole of Calcutta, and Clive came N. with Watson to revenge the massacred Eng. The battle of Plassey (1757) cusued, and with the victory of the Brit. Company troops at that buttle began the final supremacy of the Brit. in I. Three years later, at Wandewash, Sir Eyre Coote finally broke the power of the Fr. in the Deccan.

The throne of Bengal had passed into the hands of the nominees of the Brit. Company, and out of gratitude favour after favour was heaped upon them. But for a time the Brit. Company still re-garded the victory which they had won as merely a means of definitely establishing as merely a means of definitely establishing a monopoly and not an empire. Cilive, when he returned to I. in 1765, realised that it was possible to build up a great Brit. empire on the ruins of the fallen Mozul empire, but he advised against taking the risk which was necessary. The Company collected the revenues of Bengal, Behar, and Orissa, but as the vassals of the propriet engagers of fells. of the nominal emperor at Delhi. Clive during his administration pressed on many reforms which were necessary, but was sadly hampered by the fact that any reform which entalled a diminition of dividend was not popular with the board of directors who still ruled I. Finally, in of directors who still ruled I. Finally, in 1767, he returned to England, and was later bitterly attacked. The House of Commons, however, recorded its appreciation of the services which he had rendered; but worn out by the attacks and by ill-health, he committed sulcide in 1774. Cilve may well be regarded as the founder of Brit. greatness in I., and had witnessed the Company become the sovereign of Bengal, Behar, and Orissa. In the meantime the Eng. had been left with a clear field in the rest of I. after the treaty of Paris (1763). The Portuguese, the Dutch, and now the Fr., had all disappreared as rivals to the power of England. appeared as rivals to the power of England. Henceforth the king, could consolidate their power with little fear of interference from any of the European Powers. The Brit, power was threatened by Hyder Ali of Mysore, but the victory of Coote at Porto Novo again asserted the power of the Brit., which had seemed to fall at the

were deplorable because in England both politicians and commercial men had failed princes did much to extend the power of to grasp the significance of the conquest. Britain throughout the whole peninsula. Clive had realised all that was implied in Clive had realised all that was implied in the 'sovereignty' of Bengal, and in a letter to the elder Pitt had suggested that the Brit. Gov. should oust the company and shoulder the task. It took the Com-pany some time to realise that it was a sovereign power, but finally, in 1772, it appointed Warren Hastings as governor of Bengal. There are points which are debateable in the career of Warren Hastings, but here it is necessary only to mention the events without discussing ethics. Hastings certainly reformed the revenue collecting system, estab, civil and criminal courts, and made large economies. He sold certain ter, to the nabobs of Oudh, but by so doing set up Oudh as a buffer state between the Brit, and the Mahrattas, and later, when he gave the nabols of Oudh help in the Robilla war, he did so because he realised that the Robillas were a real menace to the Brit. In 1775 Lord North's Gov. passed the Regulating Act, which gave the home gov. or rian powers over the officials of the E. India Company, and instituted a suprome court of justice and a council of was Warren Hastings became the first governor-general, but for a time the hostility of his councillors prevented the operation of his schemes, During his period of power hardly any annexations had been made. Some ter, had been gained round Bombay, but on the whole he had been opposed to annexation, otherwise he would probably have annexed the ter, which he sold to the nabobs of Oudh.

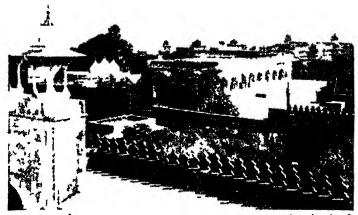
In 1784 Pitt's India Bill was passed, which created a council for 1. on which sat certain of the directors and the board of control, nominated by the crown. The real power was now in the hands of the crown, although nominally it still re-mained with the Company, a state of affairs which existed until 1858. Lord affairs which existed until 1858. Lord Cornwallis both governor-general and commander-in-chief, had power of veto to an extent never employed by Warren Hastings. He busied himself at first with internal reform, and estab. a proper system of civil service for the servants of the Company. He was responsible in 1793 for the permanent settlement of Bengal, Behar, and Orissa; by this the assessment of the revenue was declared per-petual. Legal reform also occupied his attention. The attack by Tipoo Sahib attention. The actions by ripho semi-on Travancore, however, necessitated the interference of Cornwallis, and the war ended by the cession of half of Mysore to the Company. The ter, acquired by the Company went to form the beginning of the Presidency of Madras. Cornwallis Company went to form the beginning of the Presidency of Madras. Cornwallis left I. in 1793, and was succeeded for a time by Sir John Shore, who, five years later, was succeeded by Lord Welleaey, probably the greatest of all the governorsgeneral after Warron Hastings. In 1799 the fourth Mysore war broke out, undertaken by Wellesley with definite alms. It was short and in the course of it Tipoo Sahib was killed. Wellesley was an open advocate of a policy of annexation, and

out, and Gen. A. Wellesley (brother of the governor-general) won the battle of Assaye against overwhelming odds and practically broke the power of the Mahrattas. Almost at the same time Lake defeated another army and entered Lake defeated another army and entered belbi. The troops of Sindia were utterly defeated, and the prince accepted a subsidy from the hands of the Brit. The aggressive policy of Wellesley, however, led to his recall, and Cornwallis was sent out for a second term. But Wellesley had been instrumental in causing many reforms in I., in establishing a school for civil servants, and in bringing the finances. civil servants, and in bringing the finances of the country into a sound condition in spite of the expenses of his numerous campaigns. During the eighteenth centurs the power of the Sikhs had been in reasing continually in the Punjab, and they now, under their leader, Ranjit Singh, put forward claims, that could not for one moment be admitted by the Brit, to ter, in the Punjab Itself. A Brit, Army to ter, in the Punjab itself. A Brit. Army was sent against Ranjit Singh, but no fighting took place, the menace being sufficient. Under Lord Minto's governorship missions were despatched to Persia and Afghanistan to combat Fr. influence, whilst at the same time attacks were made on the Fr. colonies of Mauritius and fle de Bourbor, the Dutch colonies in Java also being attacked and captured. The monopoly of the E. India Company was abol-ished in 1813, save so far as trade in the China seas was concerned. The period between the departure of Wellesley and the arrival of the Marquess of Hastings was one of stagnation. Hastings, however, reverted to the policy of his predecessor. During his governorship the Gurkhas were defeated and part of their ter. of Nepal was annexed; and the war against the Pindaris widened into a war with the Mahrattas, much of whose ter. in the neighnourhood of Poons was annexed.

Hastings left I. in 1823. Brit. supremthis tings left 1. In 1823. Brit, supremacy over the native states was finally estab, and the whole peninsula of I. was ruled by the Brit. But an independent kingdom had been set up in Burma, Aighanistan had developed into a really strong state, and under Ramit Singh the state of the Punjab had been unified and strongthened. Almost immediately there were clashes between Britain and these title. The European was resulted these states. The Burmese war resulted in the loss of some ter, to the Brit. Afghanistan, regarded as an important buffer state betrigartest as an important contensate op-tween Russia and Brit. 1., became for a time the centre of the storm. The Per-sans, influenced by the Russians, inter-fered there; the Brit. to protect their interests, were forced to intervene. They were at first successful, but a later Afghan later, was succeeded by Lord Wellows, probably the greatest of all the governors-rising drove the nott of Afghanistan, and genoral after Warren Hastings. In 1799 the fourth Mysore war broke out, undertaken by Wellesley with definite alms. It was short and in the course of it Tipoc Sahib was killed. Wellesley was an open prisoners released, and the Brit. evacuated advocate of a policy of annexation, and the country. In 1843, Sind (Scinde) was

annexed by Sir C Napler, and the next ridges were smeared with the fat of the war broke out on the death of Ranjit cow and the pic, thus defling both Hindu Singh, 'the lion of the Punjab Fwo and Meslem emissed the Indian singly, the non-of-the radion 1860 wars were fought with the Sikhs, the first in 1843, the second in 1843 49. The Sikhs of the Punjab were the most for indable enemies the Brit had yet met in I, but the victory at Guirry (1849) de livered the Punjab to the Brit In 1832 Lower Burms was annexed during the governor generalship of Lord Dalhouse and in 1556 Oudh was also annexed Nagpur and Chansi also passed into the possession of the Brit about the same time Between 1525 and the outbreak of the Mutiny many social reforms had force advanced against Delhi. Havelock

cow and the pig, thus delling both Hindu and Moslem enraged the Indians. The Mutiny broke out on May 10 at Meccut and spread to Dellu Within three weeks and spread to Delhi Within three weeks the whole Cangers busin was all one, and at Delhi the representative of the royal line had ug in been proclaimed emperor of I There were less than 40 000 Brit soldiers to hild in check a pop of well nigh 100 000 000 Campore and Lu know were besinged. The most horrible episode of the whole muting was the massacre at Campore (July 187) But Lawrencheld the Punjab in check a small Brit



THE TORE, AGEA

(inulian tailic

taken place under Brit rule The country had been developed, the education of the natives had been encouraged canals had been developed the telegraph and radways introduced a system of cheap postage had also been mutisted and sutter had been abelished this was a practice of Brahman women in which a widow committed suicide in her husband's funeral pyre. These reforms had been especially noticeable during the ad ministration of Lord Dallionse, and must be regarded as one of the causes of the outbreak of the Mutiny in 18-7

Indian Mutiny.—The Indian Mutiny may be traced to many come Inven tions such as the telegraph were not under stood by the native mind, and railway travelling used the ideas of casts. Other causes were the district of the Brit. policy of annexation, and especially great were the military causes. The Sopoys believed themselves the essential part of

marched to the relat of Campore with a small force and Lucknow held out In bet the tide turned at hist. Della was storred Lucknow was temforced by Hay lock and Outram and was relieved by Complete in Nov. although the city
we not finally taken until the following
year. In 1508 the Mutny may be said
to have ended, although the Central It we were not preshed until the follow-Army, recruited chiefly from high caste Hungus and from Mosk ms, who began the rivolt and sustained it, and their main gri vance was their belief that the ulti-nuite intention of their Bilt rulers was to Mutiny was backed by makentonis in Mutiny was backed by makentonis in Mutiny was backed by makentonis in Ondh who had never forgotten or forgiven the amagazion, but it is important to observe that the Mutiny was not a national rebellion against alien rule, and believed themselves the essential part of indeed some Separate tion fully and the Brit. military power in I The campaign in Afghanistan and the late Crimean made no attempt to recover their indeed swar had shaken their faith in Brit. power, pendence On the great mass of the small above all a report that the new cart. had little effect outside the areas of disnad note effect outside the areas of dis-turbance (Sir R. Compland). The chief results of the Mutiny were that the rule of the E. Iudia Company came to an end, in 1877 Queen Victoria was proclaimed empress of I., and the governor-general was known honeeforward as the vicercy. The Indian Empire established.—After the Mutiny I settled down to a veried of

the Mutiny I. settled down to a period of peace broken only by the constant suspicion of Russian intrigue in Afghanistan. This led in 1878 to the second Afghan war. The Amir was deposed, and his successor promised to receive a Brit, resident, who was shortly afterwards murdered with his escort. This resulted in the famous march of Roberts from Kabul to Kandahar, and eventually an Amir who was favourable to the Brit, was installed. Quetta and the S.E. dists, of Afghanistan were unnexed after this.

In 1885 Upper Burma was annexed as a result of the third Burmese war, and the Indian empire was practically com-pleted. The 'Morley-Minto' constitu-tional reforms may be briefly noticed. These enlarged the legislative councils, accepted the elective prin, and gave Indians a direct share in administration by admitting an dian member to the Executive Council in each of the provs. and at the centre. But if Lord Morley, then secretary of state for I., was the leading exponent of the Liberal tradition, he did not intend that these reforms should lead directly or indirectly to the estab. of a parl, system in 1. Opinion in England was not favourable to democratic instrtutions for 1. State-men and official-alike recognised that majority rule was impossible for a country which was anything but homogeneous. But on the whole, after the Mutiny, knt. statesmen were occupied in attempting to better the lot of the Indian pop. The plague, which used so frequently to occur has been combated, rullways have been fully developed, and, above all, education has been much improved. Legislative councils adopted for each prov., and the electoral system developed in the constitution of the Vicerov.

After his coronation in 1911, George V. visited 1, and held a Coronation Durbar at the beginning of 1912, this being the first visit of an king, sovereign to the Indian empire. At the Durbar the King-Emperor announced that Delhi would be the new cap. of I. Later Indian hist, is the new cap. of I. Later Indian list, is entirely political and concerned with the movement for Home Rule. For a time, the First World War put a stop to the movement; but the revolutionary spirit, which had sprung up in the last few years was only alumbering, and in Sopt. 1911 there was rioting in Calcutta by Sikhs rotarning from abroad, and the Punjab was in a disturbed state till the end of 1912. There was also evolutionary activity in There was also revolutionary activity in Bengal. After a two years' luli in politics the diome Hule movement was started again by Mss. Besaut and Thick with fresh attempts, and in Dec. the Congress and the Monley League declared for it. In 1917 E. S. Montagu, secretary of state for I.. arrived to discuss what steps should be 1948 the Simon Commission arrived in I.

taken towards establishing a gov. responsible to the Indian peoples. In 1918 a report by the vicercy and the secretary of state was pub, proposing reforms in local self-gov, the administration of the Provs., the Contral Gov., and the relations of the Native States. Appointments were to be made to all branches of the public service without distinction of race. Those were indignantly rejected by the Home Rule leaders. After the Rowlatt Committee, appointed to consider methods of dealing with lawlessness, had reported in 1918, measures in accordance with their recommendations were passed in the Imperial legislative ('ouncil in Feb. 1919 against the votes of the non-official Indian memthe votes of the non-official Indian members. Outside the Council the opposition to them was widespread and highly organised; Gandhi (q,n.) hummarated 'civil disobedience,' and a general hartal (stoppage of business) was planned for April 6. Throughout April there was rioting and loss of life. On the 13th at Amrisar about 379 persons were killed by the military. The events of April had a serious effect, and the delay by the Central Goy. (for good reusons) in holding O ntral tiov. (for good reusons) in holding an inquiry made the position still more difficult. In the summer a committee of the Lords and Commons in London had been considering the Gov. of India Bill. drawn up by Montagu, and made various recommendations. The Bill modified ac-cordingly, was passed in Dec. 1919: dyarchy was abolished, the Council of State became a second chamber, the budget was to be voted by the Legislative Assembly, cuttain franchises (racial, etc.) were created, and a High Commissioner in London was appointed. Stress was laid on the intention that the Bill was not demittive, but only provided for a period of transition to a form of self-gov. The new constitution began working on Jan. 1, 1921, and on Jan. 10 the duke of Connaught landed in I. to inaugurate the new order. I. was being deeply stirred by an agitation which outwardly conformed to (randhi's policy of non-violence throughout 1921 there were outbreak- all over I. and crime generally increased. In March Gandhi started his home spinning comnish none squared this none square each page to oust all imported cloth. In the N, the Punjah was seething with unrest among the Sikhs owing to religious disputes; encouraged by congress propa-ganda, the new section among them known as the Akalis proclaimed the restoration of sikh rule. In April 1921 Lord Reading became vicercy in succession to Lord Chelmsford, and the Rowlatt Acts were repealed. Attempts were made at an early stage in the new Imperial legislative Assembly to amend the new constitution but the home Gov. refused to move. In but the nome (no. remains to move, in March 1922 Gandhi was exrested, and sentenced to six years' imprisonment. In 1924 be was released on grounds of ill health, and more or less withdrew from politics till oarly in 1926, when he started once more a campann against Brit. rule, picking out the salt monopoly as a special object of attack.

Steps toward Self-government.—In Feb.

to study the whole constitutional question, and in the following year the Viceroy, Lord Irwin declared that dominion status was the aim of Brit. policy. The Com-mission had been called upon to report whether and to what extent it was desirable to establish in Brit. 1, the principle of responsible gov., or to extend, modify, or restrict the degree of responsible government then existing. It had been provided, when the original Brit. I. constitution was set up after the war, that it should be periodically revised; the Simon Com-mission whose report was pub. in 1930 represented the first of these revisions, and, in view of the disadvantages of such periodical overhaulings, found itself at the very beginning forced to suggest that the original recommendation should be cancelled, in order that any scheme adopted should not seem to be only a temporary measure, and changes made only so far as time night show them to be needful. Dyarchy, with its fixing of certain functions in the prov. govs. which might not be exercised by Indian ministers, was recommended for abolition. As a whole, the future constitution of I. was to be federal in its essence, that is, there was to be a central federal assembly made up of members elected not by constituencies directly, but more indirectly by the prov. legislatures. Provision was to be made for consultation of All-India questions be-tween Brit. I. and the Indian Native States: the police was to be under the states; the police was to be under the administration in each prov. of a minister who would be part of the gov. as a whole, and share in its responsibility to the legislature. As to the protection of the minorities, the Commission proposed the continuation of general accurate the continuation. continuation of separate representation for Moslems, for Sikhs, and for Europeans, and also for the depressed classes; and powers were to be reserved to the governor on behalf of the protection of minorities. Such were the main recommendations of the Simon Commission, which were put forward for public discussion.

The report of the Simon Commission marked the first stage of consultation and preparation, the second being the convening of three Round Table Conferences in London between 1930 and 1932. Prior to the first of those conferences the Brit. Gov. had issued a preliminary statement of its Indian policy which was approved by Parliament. After consideration of the Simon Report and the discussions of the Simon Report and the discussions of the Round Table Conferences, the gov. pub. its own proposals for Indian constitutional reform in a White Paper issued March, 1933. But there was still to follow a third stage of consultation, the White Paper proposals being submitted to a large joint committee of both Houses of Parliament. The Committee having consulted representatives of Brit. I. and of the Indian States, reported in Nov. 1931, with the result that the gov.'s proposals were altered. Then in Aug. 1935 came the second Act for the Gov. of I. This Act, unlike those which gave self-gov. to Canada, Australia, and S. Africa, was essentially an enactment of the Imperial Legislature and not of a dominion

parliament followed by formal enactment of the imperial parliament. Yet, considering the divergence of opinion in I., consultation followed by an imperial act was the only practicable method, particularly in view of Brit. responsibility for the minorities. But this stage had not been reached without incidents. For in Aug. 1934, Gandhi had set out from Poona to vils. in the Kaira dist. to foment evil disobedience; but he was again arrested and imprisoned. He then concentrated his energies on the Harrian—'Men of God Movement,' aiming at communism on the Russian model; but he had by now lost much of his Hindu support. Terrorism, however, now arose in Bengal again, and there was trouble on



L.N.A.

NEW DELHI: GOVERNMENT BUILDINGS

the N.W. frontier with the 'Red Shirt' agitators and the gov. had to send up troops and gins to ropel marauding Mohmands. In 1933 the Bengal Legislature passed anti-terrorist legislation by a large majority. Meanwhile the Home Rule (Swara) party had tried to make political cap, out of these disturbances, and adopted a resolution rejecting the constitutional proposals of the White Paper. It may be noted that the report of the joint part, committee advocated the creation of an All India Federation composed of self-governing units in place of the existing contralised gov. It also proposed that the provise should be given agrator share in the management of their own affairs. But it recommended that a number of important matters, such as customs and tariffs, should be subjects for the governor-general and his council. The Act of 1935 implemented practically all the recommendations of the joint committee. Put briefly, it provided for an All India Federation, Provincial Autonomy, and tesponsible Gov. with safe-guards at the centre.

The Government of India Act, 1935.
Like the constitution of 1919, that of 1935 falls into two parts: under the first, a full cabinet system was instituted in the provs.—now increased to eleven; while the second part of the Act was directed to the reconstitution of the central gov. But, in the interests of the general well-heing, the prov. governors were given the right of exercising special responsibilities at all times to ensure peace and to protect minorities, and also to legislate by ordinance and pass acts in times of energency.

The Act also extended the prov. franchise, but the property, service, and educational qualifications still remained, and com-munal electorates were still continued, notwithstanding the calstence of a general electorate. This part of the Act came into operation in April, 1937 and worked well, particularly in Madras: but, in 1938, for reasons relative to the second part, the Congress Party instructed its members to resign their cabinet posts, a move which thwarted the general development of prov. responsible gov. The second part of the Act-which never came into operation—created a new federal state com-prising both Brit. I. and the Indian states, with a bicanoral legislature, the repre-sentatives in each House to be elected. mainly, by communal constituencies, but with the representatives of the smaller communities elected by an indirect method and those of the Indian states nominated by their rulers. The federal gov, was based on the system of dyarchy which had provailed since the Act of 1919. Defence and external affairs were reserved subjects, to be dealt with by the governorgeneral and his council with ultimate responsibility to the imperial parliament. Other subject, were transferred to a Council of Ministers responsible to the federal legislature; but, just as in the case of the prove, the full cabinet system as the clearly are medified by writing in the federation was modified by vesting limiting rights in the governor-general.

Ordinarily the governor-general had limiting rights in the governor-general. Ordinarily the governor-general had special responsibilities for the maintenance of order, the protection of minorities the security of federal finance, and the safety of the rights of Indian states; in special circumstances he might issue federal ordinances or even legislate by Federal Act. Legally, the unusquation Federal Act. Legally, the inauguration of this federation depended on the execution of instruments of accession to the federation by the Indian rulers in respect of their states. Morally, too, it would have been unworkable without the general nave been unworkable without the general agreement of Indian communities and parties. Heretofore the Indian princes seem to have been hesitant; the Modenns feared that their community would disappear in a federation; while the Congress Party challenged not only the machinery whereby the Act was made, but the entire constitutional system set up by it. The great problem in regard to the general great problem in regard to the general government of ludia is the old but re-current problem of achieving unity out of diversity—a unity consistent with the diversity engraved in India, and yet transcending and binding its elements together '(Prof. Ernest Barker). The problem could never be solved by merely asserting the unjority principle, which would give the Hindus exclusive power an exclusiveness inconsistent with the spirit of compromise inherent in true democracy. It has been suggested that one method of solution would have been to recognise religious communities as autonomous corporations in their own spheres, that is in matters converning education or the religious life generally. Others suggested that instead of cabinet

posite in character and, like the Swiss form, recruited from the different parties and provs. But whatever method of solution were to be found and adopted, it had to be a solution by Indian agreement. That accomplished, the road might then lie clear to the vindication of the Brit. Gov.'s dictum that 'the natural issue of India's progress is the attainment of dominion status.' This consummation would materially strengthen the bonds of the Brit. Commonwealth of Nations, for through it, I. could influence and deter-nance, for the better, the relations between E. and W., the two major divs. of man-kind. It should, however, be pointed out that as long ago as 1917 I., while in form it may not have had dominion status, yet had even then much of its actual substance. For in that year an Imperial Conference had declared in favour of the recognition, not only of the dominions as autonomous nations of an imperial com-monwealth, but also of India as an important portion of the same. Already in 1917, I had signed the treaty of Versalles and become an original number of the League of Nations, and by 1921 even had fiscal autonomy; and again, in 1932, I. was represented at the Imperial Economic Conference at Ottawa. Thus, I. had for years been steadily moving towards the goal of complete self-gov.

Prov. autonomy was in operation throughout Brit. I, by 1938, though its introduction was attended by serious difficulties, which were surmounted by the difficulties, which were surmounted by the constructive efforts of the viceroy, Lord Linlithgow, and by the conciliatory part played by Gandhi in the settlement of differences which really concerned matters of procedure rather than fundamental questions of prin. Thus, a deadlock was avoided and the Congress Party accepted Ministerial office some waven of the Ministerial office, some seven of the eleven provs. being administered by Congress Ministries by the end of 1938, while in all eleven provs. representative wanto in all eleven provs. representative got, was working far more smoothly and efficiently than had been anticipated. But responsible gov. with safeguards at the centre was still unattainable. The Central Gov. of I. remained the offspring of the Montagu-Chelmsfold reforms as applied to the working Cov. of I. Act as embodied in the earlier Cov. of I. Act of 1919. Both the Congress Party and the Indian Moslems were hostile towards Federation, although for different reasons. The Congress Party opposed the federa-tion of democratic Brit. I. with states which were under more or less autocratic rule. Many of the leaders said that the democratisation of the states was an essential condition of the racceptance of Federa-tion. The Moslems, on the other hand, were opposed to it because the accession of the Indian states, which are mostly Hindu, would give the Hindus an exces-tive indicates. Hindu, would give the Hindus an excessive influence at the centre, where they thought the Congress Party was already too strong. The leaders of the Congress Party resented the possibility that future members of the Federal Parliament might be no more than the mouthpieces of autocrats; and it must be admitted that the more recent high of some of the gov. the federal executive might be com- that the more recent hist, of some of the

Indian states gave some colour to their apprehensions. The Movlems resented the use of the Congress dag as a national they opposed the singing in schools flag they opposed the singing in schools of a Hindu hymn which Congress regarded as a national hymn, they alleged ill treatment of Moslems in Congress governed prove and they asserted that democracy in 1 had failed, since it implied, in the greater part of the country, that the majority party was primarily composed of Hindus and that the Moslems could never form an alternative gov in view of their numerical inferiority. It was for such reasons that they asked for representation in the Congress Cabinets, and it was for such reasons that the viceroy invited party leaders to colla borate in finding some agreement in the field a a preliminary step to con stitutional advance at the centre Faced in 1941 during the any ous days of the war by the continual refusal of the chief Indian political parties to co operate with Indian political parties to co operate with the gov save on their own mutually exclusive terms, Mr Amery, secretary of state for 1, after consultation with Lord Linithgow, decided to enlarge the Executive Council to meet increased pressure of work due to the war and to establish a National Defence (council to associate Indian non official opinion as full as enoughly with the prosecution of the fully as possible with the prosecution of the war, and, shortly afterwards, representa-tives of the prove and of the Judian states were appointed The Brit Gov would naturally have preferred to leave the initia tive to the elected representatives of the major Indian parties but the ittitude of the Congress faits towards the Indian war effort—which indeed Gandhi did his atmost to obstruct—and the absorption of rival leaders in the pursuit of purely tactical advantages made this impossible tactical advantages made this impossible while no constitutional change was in volved in these appointments—constitutional changes were obviously impracticable in the midst of a life and death struggle—and the enlarged Executive (ouncil was not to be responsible to the Legislature, the gov's decision represented a bold departure from tradition and its effect was to give the viceroy a war (abuset containing a marked (abmet containing a marked majority of Indian public men who were as representative of, and as responsive to, public opinion as was possible under existing conditions, Hinaus and Moslams, constructs and Liberal being well balanced. The formation of the National Detence (our il brought representatives of the most influential sections of the community into close collaboration with the Central and prov goys It associated Brit I and the Indian States in the common to a and it provided that large body of m lerate opinion which wanted to make the goy's war effort as national as possible with opportunities for cooperation on a nation wide scale
The next rotable step in the evolution

of Indian constitutional hist was the up to March 1945 put the total on all Cripps' Mission for the creation of a new Indian Union Sir Stafford Cripps, a member of the War Cabinet, went to I. with the draft declaration of the Brit. by 'open rebellion' in pursuance of the

Gov.'s proposals for a settlement of the Indian problem The offer seemed so complete tlexible, and practical that its rejection by Congress came as a surprise even to those who had experience of the congress nund. This offer contemplated I after the war as a self governing country under a constitution trained by an elected body of representative Indians by agree mut among themselves, as a full fledged dominlon within the Common-wealth, and as tree as any dominion to secrete from the Commonwealth and declare its independence While the dor was held open for all Brit provs and Indian governed states to join in the framing of the constitution, it was left and lidian governed states to join in the framing of the constitution, it was left open for those who could not accept the constitution framed by the impority to go their own way binally, during the critical interim of the war when responsibility for 1 s defence had perfore to be borne by Great Britain, leaders of the prin parties were to be invited to be members of the viceroy's I recutive Council, with whom would rest the task of organisms the indirect, moral, and of organisms the inlitary, moral, and material resources of I for the victory on which her future freedom depended. The Cripps' offer suggested that immediately Cripps' offer suggested that incrediately after the termination of hostilities, an elected body, representative of Brit 1, and the Indian states, should be formed to frame a constitution and the Brit (ovindertook to accept any constitution so framed, subject to the right of dissention provs to form separate Unions (Cind 6500 Arril 1942). The Chamber of Irin es were willing that their States should of cinterneces and margin in with the source was compatible with the source party and integrals in with the sovereignty and integrity in formulating a new constitution but after but no, trations the But proposals were reject d by all the Indian party leaders. After a further expansion of the governor general a I secutive Council in July 1942, that I is then consisted of fourteen mem must in the victory and the community in the and of these fourteen, cleven were indians, while for the first time a bikh and a representative of the dept seel classes were included

I at this time presented a political parieto for the outbreak of the second world W in strength and the desire that I should be free. It both sharpened the eaterness? educated Indians to see their country, triged at last of all foreign control and whitted the impattance of the birt people for I is liberation which should prove that their promises had been fulfilled and bear witness to a sceptical world that the imperialism of a bygone ago wis deal. I's share in the war was great end it was still growing at this time, but to the accompanient of regret in British that it clargest and most powerful political organisation in I had not only taken no part in I is valuable contribution to the (commonwalth's war effort (a statement on Indian casualities in the war up to March 1945 put the total on all fronts at 179,759), but on the contrary had been it distage by stage under trandil's obsession of pacifism to seek to impede if the

demand for Brit. abdication. The Congreen Party in fact resolved (at a meeting of the All-I. Working Committee on July 11) to sunction the starting of a mass struggle on non-violent lines on the widest possible scale, unless its demand for immediate transfer of power were not con-ceded. Gandhi, Pandit Nehru (q v.), Maulana Azad, and members of the Working Committee were arrested, and the All-I Congress Committee and the prov. committees declared illegal. In the disorders which ensued on the arrests some 600 persons were killed. Gandhi, in Feb. 1943, then sought by fasting to secure his unconditional release and three members of the Executive Council resigned on the ground that they could not share respon-Sibility for the goves refusal to yield to Gandhi's demand. The pub. corre-pondence between the viceroy and pondence between the vicercy and Gandhi shows that the gov. held Congress and its leaders responsible for the deplorable acts of sabotage and terrorism which had supervened on the Congress revolution of Aug. 1912 (on these disturbances see Cand. 6430 of 1913).

Grave famine conditions prevailed in 1913 in parts of 1 noal; but energetic measures adopted by the new vicerov. Floid-Marshal Lord Wavell (who succeeded Lord Lantibleow in Oct. 1913). mrtigated its effects, though the number of dead from starvation and disease was nearly 700,000 (see under Brogat). In April 1944 some 500 persons were killed in explosions in Bombay docks and 2000 were injured; but whether the explosion-were caused by sabotage or not was not

stuted.

The Brit. Gov. made a statement of policy on I. m both Houses of Parliament on June 11, 1915. The main proposal, which was without prejudice to the first constitutional settlement, was that the members of the vicerov's Executive Council should in future be chosen from among leaders of Indian political life at the centre and in the provs. Meanwhile the Cripps offer remained open to L., the gov. hoping, though on no strong grounds, that Indian political leaders might reach agreement on the procedure by which I.'s permanent form of gov. could be formulated. In the vain hope of ending the deadlock the gov. stated that, provided the party leaders were prepared to cooperate in the successful conclusion of war against Japan, they were prepared to agree to Important changes in the composition of the vicerov's Executive position of the vicerov's Executive Council. It was proposed that the Executive Conneil should be reconstituted and that the vicerov should make his selection from among leaders of ludian political life in proportions which would give a balanced representation of the main communities, including equal proportions of Moslems and Caste Hindus. The mem-bers of the Conneil would therefore he Indians, with the sole exception of the viceroy and commander-in-chief-an essential provise so long as the defence of I, remained a Brit, liability. If co-operation in this policy could be schieved at the centre it would no doubt be re-

flerted in the provs. where, owing to the withdrawal of the majority party from participation, it became necessary to put into force the powers of the governors under the Act of 1935 (section 93). Nothing, however, contained in any of these new proposals affected the relations of the Crown with the Indian states through the viceroy's Crown representative (Cmd. 6652 of 1945). The above proposals owed everything to the initia-tive of Lord Wavell, who convened a political conference at Sinda to take counsel with him on the proposals for a new Executive Council. The conference new Executive Council. agreed that the Council should be reconstituted, but could not agree on the question how it should be constituted in terms of parties and communities. After consultations in London Lord Wavell on return to I, announced the gov.'s intention to convene a constitution-making body, and as a preliminary step he would, take discussions with representatives of prov. Legislative Assemblies to ascertain whether the Cripps proposals were acceptable. But pending the elections the whem between the Hindus and Moslems ber me more emphasised than ever. The Congress Party, through Nehru, made it clear that it would stand out for immediate transfer of power. Jinnah (q.e.), leader of the Muslim League, merely resterated his demand for separation and re-defined Pakistan (q.c.) as including the existing provs. of the Puniab, N.-W. Frontier Provs., Sind, Bengal, Assam, and Balu-chistan. As a result of the general elections the composition of the Central Legislative Assembly was: Congress, 57, Muslim Lougne, 30, Independents, 5, Sikh, 2, Europeans, 8,
The change of gov. in Brit 1 n, however,

was soon to introduce a change of method t not of policy towards the Indian prob-lem. The Attlee Labour Gov. concurred in the Churchill Coalition Gov. spolicy that indians should themselves from a new constitution for a fully autono nous I., but they pursued a different course in the but new pursue a different course in the period accelerating that process. Early in 1916 the gov. sent to I a Cabinet Mission consisting of Lord Pethick Lawrence (secretary of state for I.). Sir Stafford Cripps (Pessident of the Board of Irade) and A. V. Alexander (minister of Defence) to co-operate with the vicercy in preparations for setting up a constitution-making body and for creating an Faccutive Council at the Centre having the support of the chief Indian hodies. When after some three months' negotiation it became evident that, without some miliative from the mission, agreement would not be reached, the Cabinet Mission themselves put forward proposals to the effect that the constitution should be settled by a Constituent Assembly composed of representatives of all communi-ties and interests in Brit. I. and of the Indian states. Their plan contemplated the immediate setting up of an interim gov. In which all the portfolios including that of war would be held by Indians, and that after the gov, had assumed office

the constitution-making body would be assembled. The White Paper (Cmd.) essembled. The White Paper (Cmd. 6821 of 1946) on these proposals opened by repeating the hope that the Indian people would elect to remain in the Brit. Commonwealth but that if I. elected for Commonwealth but that it is specified independence, in the view of the Brit. Gov. Mission admitted that if there were to be peace in I. it must be secured by measures assuring to the Moslems a control in all assuring to the Moslems a control in all matters vital to their culture, religion, and economic interests; but on the basis of census statistics they concluded that neither a larger nor a smaller sovereign State of Pakistan would provide an acceptable solution for the communal problem. Apart from the force of arguments excited the including of necessarily. ments against the inclusion of necessarily considerable non-Muslim minorities there were also weighty administrative, economic, and military considerations, which presupposed a united I. A partitioned I. would result in dislocation of arrangements for defence and communications besides complicating the position of the Indian states The Mission was therefore unable states The Mission was incretore uname to advise the gov, that their powers should be handed over to two entirely separato sovereign states. They suggested, how-ever, that the permitted grouping of provs, with executive and legislative bodies would enable the Moslem areas to legislate in common. The Mission recombodies would enable the Mostem areas to legislate in common. The Mission recommended that the Indian Constitution should take the following basic form '(i). There should be a Union of I., embracing both Brit. I. and the states, which should deal with foreign affairs, defence, and communications, and should be empowered to raise the finances required for these subjects; (ii.) the Union should have an executive and a legislature constituted from Brit. Indian and states representafrom Brit. Indian and states representatives. Any question raising a major com-munal issue in the Legislature should require for its decision a majority of representatives present and voting of each of sentatives present and voting of each of the two major communities as well as a majority of all the members present and voting; (iii.) all subjects other than Union subjects and all residuary powers should vest in the provs.; (iv.) the states should retain all subjects and powers other than those ceded to the Union; (v.) provs, should be free to form groups with executives and legislatures; (vi.) a majority vote of the Legislature Assembly of any prov, could call for a reconsideraof any prov. could call for a reconsidera-tion of the terms of the constitution after an initial period of ten years. In the relationship of the Indian states to Brit. I. the White Paper stated that with the attainment of independence by Brit. I., paramountcy could neither be retained by the Brit. Crown nor transferred to the new the Brit. Crown nor transferred to the new gov. of I. Following the pub. of the mission's plan communal controversy centred on such issues as parity, grouping, and the sovereign rights of the Con-stituent Assembly, and eventually the Mission and the vicency proposed that a body consisting of five members of the Mission League, all members of the Congov. of I. Following the pub. of the mission's plan communal controversy tentred on such issues as parity, grouping, and the sovereign rights of the Contituent A-sembly, and eventually the Mission and the viceopy proposed that a body consisting of five members of the Continuit League, six members of the Congress Party, and one each of the Sikh, Parsi, and Indian Christian minority (q.v.) pointed out that unless there was

communities should form an interim gov. Later it was stated that until a new interim coalition gov. was formed a 'caretaker government' of officials would be set up and that elections to the Constituent Assembly would take place as soon as possible. The elections to 385 seats, held possible. The elections to any street, in July, resulted as follows: Congress, Independent possible. The elections to 385 seats, held in July, resulted as follows: Congress, 205; Muslim League, 73; Independent General, 9; Unionists, 3; Independent Muslims, 3. But as the Muslim League, on July 27, revoked its previous acceptance of the Cabinet Mission's scheme, the duty devolved on the viceroy to try to form an interim gov. The Congress Party's nominoes assumed office on Sept. 2. Subsequently agreement between the viceroy and Jinnah led to the inclusion on Oct. 26 of five nominoes of the Muslim League. Disorders were frequent during these events. Muslim 'direct action day' observed on Aug. 16 was marked by riots in which 5000 persons were killed and many more injured. Later were killed and many more injured. Later in the year psoudo-nationalist outrages by the year psoudo-nationalist outrages by thuse led to heavy loss of lives and wide-spread destruction of property in Bihar, Bombav, and E. Bengal.

The Constituent Assembly, owing to differences among Indian Parties, did not function in the manner intended by the

Mission's plan. In yet another statement of policy ("md. 7047 of 1917) the Brit. Labour Gov. repeated that they desired to band over their responsibilities to to hand over their responsibilities as authorities estab, by a constitution approved by all parties in I., but that there was no prospect that such a constitution and such authorities would emerge; and then followed the startling intimation that the government to scaring intimation that the government of the tended to take the necessary steps to effect the transference of power into responsible Indian hands by a date not later than June 1948. Assuming by then that a constitution had not been worked out by a fully representative Assembly the gov 'would have to consider to whom the powers of the Central Government in British India should be handed over on the due date, whether as a whole to some form of central Government for British India, or in some areas to the existing provincial Governments, or in such other way as may seem most reasonable and in the best interests of the Indian people. The gov., however, intended to put in hand, without delay, preparatory measures for the transference and, while admitting that the efficiency of the civil administration must be maintained and the defence of I. be fully provided for, realised that as the process of transfer proceeded it would provisions of the Gov. Act, 1935.

In the Commons (March 1947) in the

debate on I., Winston Churchill, leader of

the gov. had demissed very lightly the pledges which littain gave in respect of minorities and especially of the depressed classes. The Conservative Opposition in fact considered that the gov.'s policy instead of standing out as a great act of magnanimity and self abnegation would go down to hist as a surrender and a betrayal.

The Indian Independence Act, 1947 — In the discussions of 1946-47 it proved impossible to obtain agreement either on the cabinet mission plan or on any other plan that would preserve the contury old unity of I Cocroin being outside practical politics, the only alternative was partition A political settlement along the lines of Pakistan afforded, at this time, the only practicable alternative to civil war, but the Brit proposals ex-pressly left the way open to negotiation between the communities for an Indian Union of the kind foreshadowed in the cabinet mission's plan. No agreement other than by partition having proved acceptable, a plar is evolved by Viscount Mountbatten and agreed to by Indian political leaders. This plan in release debt are of the transfer. volved a decision of the two Indian parties as to whether there should be a partition and if partition was decided, then two Constitutional Assemblies would deter-mine the future constitution of each of these divs. In these circumstances the Prime Minister on June 3, 1947 aunounced in the House of Commons that the gov proposed to introduce legislation at once for the transfer of power that year on a basis of dominion status (q r) to one of two successor authorities—thereby leaving the Indianum them is a state of the state of th it to Indians themselves to decide whether or not there should be partition. The majority of the representatives of the provs. of Madras, Bombay, the United Provs., Bihar, Central Provs., Herar, Assam, Orissa, and the N.-W. Frontier Prov. and the representatives of Delhi, Ajmer-Merwara and Coorg had, by this Affiner-Merwara and coorginate, by this time, made progress in evolving a new constitution as invited to do in the cabinet mission's plan. On the other hand, the Muslim Lengue Party, including in it a majority of the representatives of Bengul. the Punjab, and Sind, as also the representative of Brit Baluchistan, had sentative of Brit Baluchistan, and decided not to participate in the Constituent Assembly. The procedure provided for in the Brit, plan was therefore designed to enable the peoples of I to decide, and to decide quickly, whether the Brit were to hand over power to one or to two gove, and further, to determine maken to the future rectification of sentative of Brit had subject to the future rectification of frontiers by a boundary commission, the areas of Brit. I within which the two govs., if the In lian peoples wanted parti-tion, should rule The plan of procedura also provided for a transitional period of dominion status for the Indian Gov. or govs, without prejudice to their ultimate right to regulate their own relations with

agreement among the Indian parties the pated the transfer of power which was Gov. would hand over to an indeterminate projected for 1948; for it enabled a beginnumber of authorities, and he thought that using to be made at once with the transfer of effective power to Indian hands by calling into existence a succession gov. or govs. well before even the end of 1947. The sequel to the announcement of this new procedure was the introduction in the House of Commons on July 4, 1947, of the Indian Independence Bill, providing for the estab, of the two independent domin-lons of I. (not Hindostan) and Pakistan on the succeeding Aug 15. The Bill gave extensive transitional powers to the viceroy and governor-general to make orders for dividing between the new dominions the powers of the governor-general in (ouncil and for the div. of the Indian Thus was surmounted the armed forces difficulty of finding a method of effecting the transfer of power without waiting for the completion of the process, almost cert inity lengthy, by which the peoples of I must finally shape their own constitutional arrangements. The Bill also provided for the appointment of boundary commissions for Bengal and the Punjab. I ach dominion was to have its own governor-general; but, pending their diction, there was one governor general for both Full legislative authority in each dominion was vested in its Constituent Assembly, which was, consequently, empowered to create its own (abinct. The Bill did not and could not in relate directly for the Indian states, the transfer of power without waiting for but it laid down in terms the right of the states to accede to either of the new dominions—an important declaration in view of the political pressure to which the view of the pointest pressure to which the concress Party But the Bill also provided that from Aug. 15 the sucrainty of the rown over the states would lapse and all power and authority exercisable by the Crown in relation to them come to an end By its nature the peculiar relation of para-mountey which for so great a period had linked the states to the Crown buld not to transferred to any succession tov. was casontial, indeed, that the states should be given time to adapt themselves to the new regime, and that was the intention of the Bill in so far as the states came within ita - cope. The Indian Independence Act received the Royal Assent on July 18, 1947 Lord Mountbatten who succeeded lord Wavell as last of the viceroys, was accepted by the Congress Party as ivernor-general of the dominion of I and Wi Jinnah (q,v) as governor-general of Pikistan

On Aug. 8, 1947. Delhi and Karachi became the caps of I and Pakistan respectively. Mohammed Ali Jinnah (gr.) was elected presacant of the Pakistan constituent Assembly (Aug. 11) Constitutionally the two new dominions came into existence at midnight of Aug. 14, 1917 Jinnah was sworn in as governor-general of Pakistan and Earl Mountbutten as governor general of I (Aug. 15) Two days later the Boundary Commission's findings on the partition of Bengal and the Brit. Commonwealth and the world at the Punjab were announced, Calcutta large. This procedure, therefore, anticibeing given to 1 and Lahore to Pakistan.

The partition scheme allotted 63,775 sq m with an estimated pop of 6,470 000 to W Punjah and 35,314 sq m with a pop of 11 547 900 to I Punjah Roting on a wide spread scale then broke out in the Punjab and a mass movement from the ript affected areas of the Punjab began Serious disorders in the Punjah and Quetta serious disorders in the l'unjab and Quetfa led to the evacuation of threatened minorities. After the piemiers of the two dominious had conferred at Labore (vept 4) on measures to be taken in this grave emergency violence in the Punjab declined and on Sept 20 they issued a statement declaring their agreement on the une self the converse to established. to remove causes of conflict. When the necessity to co operate in establishing said their intention said their intention. disorders in the Punjab reached an uneass lull in early Oct many thousands of persons had been killed. The lull was broken by frequent minor riots in out lying the and vile and by applicate raids by armed gangs on truns and road con voys on both sides of the Punith border Nor did Dolhi escape the bitterness of communal hate and there whole streets in the Muslim quarters liv described and looted, while their former inhab were either on the move by road or rail to W Punjab or were herded in abject misery and four into refuser camps. Ultimately some six million Muslim refusers were transferred from I to I akistan as a result of the Punjab disorders and five million Hindus and Sikhs from Pakistan ter to Indian (for details of the Punjab disorders see PU JAB History) There was also see PUNJAR History) There was also tension in Kashmir State which developed into armed rebellion (Oct 22) by Muslim peasantry against their Hindu maharajah in favour of Pakistan kashmir however acceded to the Indian Union (Oct 27) and a new interim gov was formed soon afterwards Rebel forces advanced on the cap but were third back. On Nov 9 Indian troops occupied the State of Junagadh (one of the States of the former Western I States Agency) which had previously accided to Pakistan the gov of which lodged a strong protest against this action. It was on this dute (Nov 9) that the Constituent A sembly of I met for the first time as the latinment of the dominion A month liter it was ann nunced in this parliam at that agree ment had been reached in negetiations between I and Pakistan on all outstand mg issues relating to partition This agreement however, did not relate to the Indian is the Muslim Min of Hydera Indian is the Muslim Nizin of Hydera bad are ed to reform he executive council though as the secuely was to show the was far from ending his difficulties. On Dec 19, Firl Mountbatten took the slute at New Delhi of the fare well part of the last Brit troops to leave the cap Five days later flerce fighting occurred between Indian troops and insurgents in Kashmir on the Jammu treet and a week later Bandit Schum

1949 Gandhi began a new fast in the cause of Hindu Muslim unity but after assurance that lead is of all communities would carry out his conditions for restoring communit harmony he broke his day fast. While he was addressing a pusyer meeting at Delhi (Ian 20) a bomb

day fast. While he was addresding a prayer meeting at Delhi (Ian 20) a bomb expleded in the vicinity but without damige. Ich davs later he was shot by a findu fanatic while on his way to an evenury prayer meeting at Delhi and died half an I cur later (see Gannii). On



1 va cd Pros

GANDHI ADDRESSING A PRAYER MEETING JANUARY 1948

The in t grain was taken shortly before his assassinati n

Ich 21 Junagadh where there had been considerable unrest, voted for accession to the Indian Union by a huge majority A week later the last Bift troeps in I left Boml i, (feb 23) On Farl Mount-batten relinquishing office 54 (hakrayanty Rajugo) dachari was appointed governor general of I fills was not the only change in the two governor generalships for later in it year Jinnah died of heart failure and was succeeded by khwaja Nazi mulion Chief indice to in the hist of the sultitude of the sultitu

well par id of the last Brit troops to leave the cap Five days later flered and insurgents in Kashmir of the Jammu profit, and a week later Pandit Nehru referred the Kashmir dispute to the flam and policy of many once power seterred the Kashmir dispute to the flam was the integration in the general than the control of the flam o

the dominion of I., found themselves reduced to seven groups of 'unions' and a score of units. The latter were cou-fined to the largest states, at first usually fined to the largest states, at first usually held to justify their separate existence where their pop. was at least 1,000,000. But this criterion of viability was soon abandoned and most of the remaining units were either grouped with neighbouring states or merged in adjacent provs. The princes themselves have mostly become political pensioners still enloying some personal privileges but with much reduced privy purses. Two main factors contributed to this process of integration: the influence of Indian nationalism within the states and the determination of the States Ministry at Delhi to remove any possible challenge by disaffected princes see Hydernand. by disaffected princes (see HYDERABAD). Travancore (pop 6,000,000) and Cochin (1,250,000) still retained their identity in (1,250,000) still retained their identity in 1949, but may later be united to a new Kerala prov. of Malayalam-speaking people including adjacent dists. of Madras, Mysore (7,000,000) too, having reached a compromise over popular rule, also remains a separate political unit; but if Madras Prov. should be partitioned into its linguistic coppular, i.'s. Mysore might eventually be merged in Tamil-Nad (as distinct from the Telugu-speaking part of Madras). Some litteen of the former Madras). Some fifteen of the former Decean states, and the states of Kolhapur and Baroda were merged with Bombay. Hyderabad, too, retains a precarious identity, but if Nationalist agitation for partition should prevail, its E, half would probably be assigned to the Andhra-Desh or Telugu-speaking part of Madras and Its N.W. areas would join the Marathi-speaking areas of Bombay and the Central speaking areas of Bombay and the Central Provs, to form a new prov. of Maharashtra. The half-dozen Gujerat states, merged with Bombay Prov. early in 1948, have mostly lot their sev. identifies. A group of minor states, formerly under the Chattisrarh and Orissa Agencies, were merged early in 1948 into the adjacent Contral Provs. and Orissa and have vanished from the map of I. Kutch in Western I, and chamba and Bilaspur in the Flimplayan joothills are directly Western I, and chamba and Bilaspur in the Himalayan toothills are directly administered by the I mon Gov. of I. Rampur and Benates (in the United Provs.) and Cooch Bihar. Tripura, and Manipur (in Assam) still retain their identity, but will probably be absorbed. The status of Kashnir, which is in dispute between I and Dollaten will aventually

Baghelkhand states, and the most backmagnetic and states, and the most occurrence ward and underveloped part of I. In default of some capacity for self-gov, the union may be merged into the adjacent United Provs.; (1) Rajasthau, the biggest of all the unions. Its membership of ton Bainville and the default of the self-government of t of ten Rajputana states, headed by I'daipur, was expanded in 1919 to include four inportant Rajput states hitherto regarded as 'viable units'—Bikanir, Jaipur, Jaisalmer, and Jodhpur—and thereby became the greatest administratwo unit in I, with an area of 121,000 sq. m. and a pop. of 12,000,000—notable achievement of the States Ministry; (5) Mat-ya (E. of Rajasthan) whose future status is under consideration. Probably Alwar, one of the states of the union, will join Rajasthan, while Bharatour and Pholpur states will merge with the United Provs.; (6) five Sikh states of the R. Punjab, headed by Patiala (pop. 2000). the E Punjab, headed by Patiala (pop. 2,000,000); and (7) Himachal Pradesh, also in the E. Punjab and formed out of ten small hill states, differing from other mions in that it is directly administered from Delhi. All these changes have conduced to the unification of I. However arbitrary the methods used, realism demands the admission that the continuation of the states as strongholds of a derinand the admission that the continuation of the states as strongholds of a picture-que mediaeval feudalism and despotsm had become an anachronism which could not long have resisted the democratic forces germinating through-out I. It is evident that the states must conform to the pattern of political progress in the rest of I, and already they have been shorn of much of their former splendour. Courts, banquets, processions, and lavish hospitality must be adjusted to restricted privy purses. The princes are now either servants of the people or absence aristocrats, some, however, have been recruited into the forcign seron three subjects only—defence, foreign relations, and communications, but are regular aligning themselves with the provs. in their polity, and in 1949 the Rappramukhs (comparable to prov. governors) of all unions signed fresh instruments of accession conceding to Delhi ben-lative powers in respect of all subjects which the provs, themselves conceded to the Central Gov.

Manipur (in Assam) still refain their identity, but will probably be absorbed. The strius of Kachmir, which is in dispute between L and Pakistan, will eventually be decided by a phobiscite under the anspices of the United Nations (see Kashmir). The seven proups or unions are: (1) Saurashtra, a combination of 280 states and estates in Kathiawar; (2) Madhyahad estates in Kathiawar; (2) Madhyahad estates, the largest of which is Gwalier (see the Buddhists, Then there are also the Pharat, the official style of a union of twenty-eight of the twenty-nine Malwa states, the largest of which is Gwalier (3,000,000). This union, like that of Saurashtra, has achieved a degree of stability, but there is conflict over Bhopal, the twenty-ninth Malwa state, between the Central Provs. and Madhyahad hist, but agitating for its absorption into their ters.; (3) Vindhya-Pradesh, a gnion of thirty-four Bundelkhand and



Inlian Sate hadaays 'TOILET SCENE' A IPFSCO PAINTING AL ATANEA

Kolarian languages (see further under INDO EUROPEAN LANGUAGES) The Veda is one of the oldest and most important of the literary works belonging to the Indo European languages It is not a series of books, like the Heb Bible, but a great itterature which grew during the centuries, and for many generations was handed down verbally. The Vedic Interature is now separated into four classes.—Sambitas or collections of hymns, Brahmanas prose texts, tranyakas, foresticate and I panishads, secret doctrines. The Sumbilas may again be divided into four dive, and it is because of these dive that the Vedic iterature is sometimes spoken of as Vedas "It rature is sometimes spoken of as reassumstead of Feda. The Kalpasutras, manuals of ritual, also form a literature closels allied to the Veda but as it is not considered to be of divine revelation it is not included in the Veda but laterature proper. The first traces of epic poetry are to be found in the Veda, but later a whole beginning by your sumy by whole heroic literature grow up sung by the sutan or bards at various festivals These epics and ballads have been col-lected into two great epic works which are rather complete literatures in themselves than single poems. The first of these, the Mahalharata (q r), is the narrative of the battle of Bhanatas, and the author is traditionally supposed to be an anct mythical secr. Vyasa, who is also supposed to have compiled the Vcd and the heroic

century B c; but much of the Ramayana seems to have been added at a later date. There is more unity, however, in the Ramayana than in the Mahabharata, but which of the two is the older it is difficult to determine because neither may be in its original form The Ramayana may be considered the cpic of Eastern I and the Mahabharata of Western I The Puranas are 'old nurratives,' and their date is uncertain, but they belong to a later Indian religion, Hindiusin There are eighteen 'Great Puranas' and sev lesser ones. The date of the lighteen to religious literature of the Buddhet, the religious between the fourth and third centuries. See also HINDUSTANI LANGUAGE and LITFRATI RI

INDIAN ART—The earliest known art of I is that of the Indus valley culture (7v), dating from about 2 00 BC and Mesopotamia The Indus culture was succeeded after an unknown interval of time by the Arsan culture which again centred in the Indus valley and dates perhaps from 1000 B C or carlier. This age is known from the Veday, but none of the buildings or sculpture of the time has survived. The first period from which dates a continuous knowledge of Indian art comes much later. It possesses a dis att comes much later. It possesses a distinctive Indian character. During the rights of Chandragupt Maury (322-298 BC) and of his grandson Noka (273-232 BC), in puticular, it is known that sulpture and architecture, the arts in which I has made its greatest contribution to the world, flourished. Persian influence had been in existence since about 800 BC, and was particularly evident during the Municup period. The communicative pullars erected by Nobla may memorative pillars erected by Asoka may have been Persian in origin. Asoka being a devout Buddhist also built a number of burnl mounds enshrining Buddhist reiles. The greatest of these was the great Stupe or burnal mound at Sanchi in Bhopal Among smaller works a number of inter-esting portrait heads in sandstone and grips of figures in terracotts have sur vived Early Indian art is rullstir, orn uous, pantheistic seldom idealistic The tridition continued during the post Maury in periods—the Sunga and Kanya dynastics from about 200 B.C. up to A D. 20 Literary evidences show that painting was also practed, mainly as mural decora-A) inta caves in the dist of Khandeish in the Decem (Hyderabad) belong to this carly period. The Alanta freecoes were painted over a period from 200 H c. to the seventh century and hev depict realistic seems from Buddhist life, and parables from the Puddhist religion and as composit one are among the great works of art of the world. Long subtle curves, bold and vigorous lires, and uniform thickness of line are the chief features. Water-colour, and ingredients made of coloured story clay and different ways and the stone, clay, and silicates, were used. Ok and carly Christian influences made them poems, Puranas (q v). The second of the two epics, the liamayana (q v) is probably edited the work of a post, named Valmid, who, as far as it is known, lived in the third kings, particularly Kaniskha (120-162).

From this time date the early sculptured figures of Buddha which have become so well recognised a feature of Indian art The Kushan Unpir was succeeded in Northern I by the Cupta dynasty when Chandragupta I came to the throne in a D 320 The dynasty survived for nearly 300 years when it was finally over nearly 400 years which it was finally over come by the unvasion of the Huns as a result of which few examples of the art of the period have survived. I nough is known however to show the excellence to which the art of sculpture attained espocially in the second quetted on the walls of temples. The caupta period is in walls of temples—The Gupta period is in fact reckoned as the great age of Indian sculpture. The style is its heavy than that of earlier years and is richly decor-tive. It was the cupta artists who evolved the most perfect forms of the Buddhist and Brihn an divinities. The Buddhist and Bribn an divinities temples were built structurally, and not a enclosures, with short pillars crowned by heavy square cupitals Gk influences were by now completely absorbed. Metal casting was carried out with enhanced excellence a remarkable example being the colossal statue of Buddha from Sultan gan; of the fifth century now in the Birmingham m; u In Southern I in the Deccan a style of flat roofed architec ture with horse, shoe arche, and decorative columns was developed. The stability given to the country by the Andhra dynasty which ha ted from 22 > B (to the third century an allowed continuous development. This dynasty and its sic cus ir, the Chalvilla are remembered for its elal crate temples hewn from the rock Southern Indian architecture achieved its greatest success under the Pallava dynasty (fourth to eighth century) and the (holas (tenth to thuteenth century) to whom h long some of the finest or amples of know castin. A distinctive feature of Dravidian architecture under the Cholas was the Lymanid shaped tower surmounted by a stone monument the great temple at Tanjore the tower of this description race to a height of 190 ft Some of the glories of Gupta art we revived in Northern I during the reign of Harsha With the death of Harsha in A D 647 the hist of ait in the N shifts to the kingdom which was founded in Bengal by the Pala dynasty in 1 D 7:0 and lasted until the Muslim invasions of the twelfth century. Much intricate and carefully wrought metal work! longs to this perio! The sculpture notably Buddhistic figures in black slate, up norm ites to metal work and lacks the sensuous modelling of earlier periods Artists whose names are known through the writings of a Chinese missionary as having belonged to the Pali school of art are Dhimana and his son Vitapala

During the medicial period that is the six hundred years from the death of Harsha to the Mohammedan invasions architecture was the principal form of art Much was destroyed by the Moslems. The Rapputs of the tenth and eleventh een The turies undertook many great building and engineering facts. A medieval Indo



THE (ROPIO TIVILE OF VISHAU KARMAH

One of the many underground temples in Ind a an i probably the most ancient type of temple

North in I characterised by a curvilinear structure i at the top and bulging in the middle This was unknown in Southern I wher the Dravidius pyramidal tower pre-val 1 Delhi was captured by the M slems in 1193 an event which was commemorated by the founding of a mrs.16 the carliest Islamic building in I In 1) Islamic architecture now came into being the doma and minarct were intro du (d and combined with the indigenous festures of Hin in art An outstanding festures of Hindu art in minent of this period is the enormous Outh Mina, a mosque over 200 ft high built at Delhi by the sultan Iltutmish and could ted in 1332. Among other of the Dill sultans who wer great builders was lu 12 Shih (13) I Sb) who with the aid of his architect Malik (hizz) sahana en led Delhi and built many new the He wa also careful to r ster earlier monu Before I came under the rule of Mogul emperors a nation must be or if of the artistic achievements of the cipius who ruled in Vianagar in Malas from 1336 the traditional date of the founding of the empire until 1565 wh n heetly was sack div Muslim armies fron the N. The temples built under the Virmis ir dynasty show am ignificent and vinerant style contracting with the of 1 unting and scultture also flourished I n ler the Mogul emperors a blending of Hindu Islamic and Persian styles trindu Islamic and revision styles is silted in a flowering of the arts, particularly architecture in a sculpture. The sutiful city of Latchpur Skrijs perhaps the greatest monument to Akbar who however planned hown mausoleum at al indara. This with its four terraces an i white marble sup retructure us com-pleted in 1612 during the reign of 1cl angir Io has successor which Ichan (1821-58) are owed the most celebrated examples of Mogul architecture—the mausoleum of I changir near I ahore and at Agra the Pearl mosque and the Taj Mahal The Aryan type of architecture was evolved in Persian influence predominated over the

Hindu and decoration became more claborate than was to the taste of the earlier

Mozul emperors.

Painting received a great impetus through the patronage and conneisseur-ship of the three Mogul emperors, Humasing of the three most emperor, assumption, Akbar, and Jahangir. Humayin, lather of Akbar, spent some years of exile in Persia, and on returning to his throne he brought with him Persian painters who influenced the Hindu school. Painting has had a long tradition in I. Mention has already been made of the Ajanta freeces. Mural paintings of great merit also survive from the sixth century in the caves of Bagh, nearly 300 m. N. of Ajanta. These appart, however, and except for some MS. illustrations of the medieval schools of painting in Bengal, Nepal, and Gujerat, little survives from the centuries before the Mogul era. Mogul pointing is mainly miniature work but derives from Persia and not from the traditional style of Ms. painting. Akbar had a number painters working for him, many of them Hindu and many whose names are known. Subjects chosen were portraits of men of the time and scenes chroneling events. W, influences were also telt. Gradations of tone, effects of light and shade are features of Mogul painting. In this it is distinguished from the work of the painters of Rajputana, Bundelkhand, and the Himalayan Punjah, Rajput painting derived from the traditional mural art and was devoted to illustrating the stories of legend and religious epic. The colouring legend and religious epic. The colouring is mostly flat. The two styles often interis mostly flat. The two styles often inter-mingled but in the best work are dis-tinguishable. Mogul mainting declined during the reign of Annungaelie who discouraged the arts for religious reasons. Raiput painting continued into the eighteenth and nineteenth centuries and centred particularly in Japur. Later Raiput painting is seen at its best in the Pahari art, named from the hill country of the Punjab where it flourished. It was divided between the schools centred at Jammu and Kangra. Kangra painting is Jammu and Kangra. Editori painting is graceful in line and soft in colouring. In the nineteenth century it declined although portrait painting was encouraged by the Sikh rulers of the Punah. As the century advanced W, influences weakened many of the distinctive features of Indian art, but in the early twentieth century a movement in recognition of the artistic heritage of I. in which the Tagore family was prominent, brought about a renalssance of the arts; Dr. Abanindranath Tagore has given a unique display of Ajanta ar motif in brilliant paintings. In Bombay a contemporary school of art sought to assimilate European influences. especially Fr. Among modern Indian painters and sculptors may be mentioned Shabani Charan Guil, K. Krishna Hebbar, and Chint anoni Kar.

and Chint mont Kar.

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Indiagher, Lake, see ENARE.

Indiagher, Lake, see ENARE.
India House, the name by which East
India House, demolished in 1861, the
headquarters of the old East India Company, in Leadenhall Street, was known.
Prior to such occupation the Company
transacted its affairs from 1621 to 1638,
in Crosby Hall, Bishopsgate. The modern
I. H. which is situated in Aldwych,
London, was opened by the KingEmperor and Queen-Empress in July
1930. The new building was the outcome of proposals submitted by Sir Atul
Chatterice himself, Lord Irwin's Gov.
ultimately accepting the project, and the ultinately accepting the project, and the Legislative Assembly voting the sum of 2324,000 for erection and equipment. The building is essentially Indian in provenance; its purposes are not exclusively official, but are also directed towards providing a London home for India. It is the work of Sir Herbert Baker, who had much to do with the building of New Delhi.

Indiana, N. central state of the U.S.A., generally known as the 'Hoosier State,' the second to be erected from the old N.W. It covers an area of 36,291 sq. m., 305 of which are water-surface; and its greatest length and breadth are respectively 277 m. and 145 m. It is bounded on the N. by Michigan, on the S. by Kentucky, on the E. by Ohio, and on the W. by Illinois. The state lies in the Mississippl valley and in the besin of the Great Lakes, and is well watered by sev. streams, Lakes, and is well watered by sev. streams, of which the most important is the Washash. The greater part of the surface is undulating prairie land. The fertility of the soil is largely increased by a system of under-draining. Agriculture is the prin. industry, 91 per cent of its total area being farms; the chief crops are corn, wheat, oats, hay, and rye. Barley and maize are grown, as also is tobacco. Large quantities of tomatoes and other vegetables and fruits are grown for the regetables and fruits are grown for the mrkts, and exported, and the rearing of livestock has increased in recent years. The chief mineral productions are coal, petroleum, limestone, sandstone, building the coal of the production of the production of the productions are coal, petroleum, limestone, sandstone, building the coal of the productions are coal. stones, etc., and natural gas, the chief field of which is in Delaware county. The production of pig-fron is considerable, and production of pig-iron is considerable, and the clay-working industries are important—these yield bricks, tiles, pipes, pottery, etc. Other manufs, include fron, glass, carriages, railroad cars, woollens, etc. Transport is well provided by the natural facilities of the Ohio and Wabash rivs, and by Lake Michigan; while by land there is a total of 7,187 m. of steam rullway and 2,135.07 m, of electric. Added to this all the lines from the E. to Chicago pass the lines from the E. to Chicago pass of through indiana, and other connections of Lord Dufferin's, and the first meeting with E. W., N., and S., which are of was held in 1885 during his viceroyalty, great importance to trade. The prin. W. C. Bonnerii being the first president. mulvs. are Purdue Univ.; Indiana Univ.; This tirst meeting was attended by De Pauw Univ.; and the Univ. of Notre seventy-two delegates, mostly lawyers, Dame. I. is governed by a General schoolmasters, and journalists. A. O. Assembly consisting of a Senate of 50

Popular Hinduism, 1935; N. MacNicol members elected for 4 years and a House (ed.), Hindu Scriptures (Everyman's clibrary), 1938; E. Abegg, Indische elected for 2 years. The climate is repsychologie, 1945; E. Mackay, Early markably equable. Pop. 3,427,700. The Indian Civilisations, 1948; C. Isherwood (ed.), Vedanta for the Western World, 1948. U.S. The leading cities are Indianapolis, Indiana Civilisations, 1948, etc. William (1948). markably equable. Pop. 3,427,700. The State is sixth in coal production in the U.S. The leading cities are Indianapolis, Fort Wayne, South Bend, Evansville, and Cary. See W. H. Smith, History of Indiana, 1897; S. S. Visher, Economic Geography of Indiana, 1923; E. Logan, A History of Indiana, 1924; Federal Writers Project, Indiana: a Guide to the Hossier State, 1941.

Indianapolis, cap, and the largest city of Indiana, U.S.A., 195 m. S.S.E. of Chicago by rail, and 821 m. W. of New York. It is one of the best built and most attractive inland cities of America. Many of its streets are 100 ft, wide and diagonally intersect the four main avenues of Massachusetts, Indiana, Virginia, and Kentucky, which radiate from the Central Park, Monument Place. The city is en-circled by a railway, connecting all the great trunk lines, thus facilitating truffic. The chief buildings and institutions are The chief buildings and institutions are the state Capitol, Co. court-house, Board of Trade building, public library, masonic temple, central hospital, Blind and Deaf and Dumb Asylums. As a centre of education, I. is of considerable importance. the most noted institutions being the univ., the Central College of Physicians and Surgeons, technical institute, etc. The manufs. comprise iron goods, furniture, carriages, waggons, glass, woollen and cotton goods, and agric, implements. and cotton goods, and agric. Implements this a live-tock centre, with stockyards and packing houses. There is a large trade in grain. Fort Benjamin Harrison is situated near. Pop. 386,900. See B. R. Sulgrove, History of Indianapoles and Marion County, 1881.

Indian Archipelago, see East Indies. Indian Architecture and Art, see ARCHI-TECTURE -India, and INDIA (ART).

Indian Corn, see MAIZE.

Indian Cress, see NASTURTIUM. Indian Fig, see BANYAN TREE.

Indian Fire, a white signal light, composed of seven parts of sulphur to two of realgar and twenty-four of nitre.

Indian Homp, see BHANG and HEMP. Indian Ink (or Chinese Ink), an ink first made in China; compound of lamp-black and gum, moulded into sticks and some-Used in China for but in Europe for times perfumed. ordinary writing illustrative work.

Indian Millet, a cereal grass, species of panieum (P. maximum), widely grown in Meditorranean countries and the E. believed to have been the first wild grain to be cultivated. Replaces rice in drier climates, a good bread being made from Also serves as cattle fodder; also called Kaffir corn.

Indian National Congress. The origin of this C. may be set down to a suggestion of Lord Dufferin's, and the first meeting

which was meant to grow into a native Socotra, belonging to Africa, whilst the parliament. At the first C. loyalty to prin. is. in the E. are the Laccadives, England was stressed. The next C., a Maldives, Ceylon, the Andaman Isles, and England was stressed. The next C., a year later, had 440 delegates. The movement was in the beginning essentially Hindu and from the W.-educated classes; the Muslims had little to do with it, the Moslem League Association being their representative body. In 1916 both bodies combined in a declaration for Indian Home Rule, and it was evident that C. had now hear captured by the attentials. had now been captured by the extremists. From about this time it became somewhat overshadowed by the organised Nationalist movement under Gandhi's leadership. Thus the I. N. C. owed its birth to Indians who had been attracted by ideals learnt from Eng. culture and teaching; with their were joined from opposite motives other Hindus whose yearnings were for the past days of Indian glory and who hated European rule. It was from the union of these opposites that the Nationalist movement sprang, which found its fruits in the Brit. declaration of 1917 leading to responsible gay, in India. The goal of the Congress is expressed in their phrase purns swaral, first interpreted as a complete independence but later modified as meaning but craip at will. See further under INDIA—history. See C. F. Androws and G. Mukerji, The rise and growth of Congress in India, 1937; Sir R. Coupland, Indian Politics, 1936-1942, 1943; J. T. Gwynn, Indian politics, 1944; Sir H. Lovett, History of the Indian Nationalist Movement, 1921; B. Pattabhi Sitaramayya, The History of the Indian National Congress, 1935.

Indian Mutiny, see INDIA—History. ing to responsible gov. in India.

Indian Mutiny, see India—History. Indian Ocean, is bounded on the N. by Asia (Arabia, Persia, India); on the E. by Indo-China, Sunda Islands, Australia, and the meridian of the southernmost point of Tusunsuis; on the W. by Africa and the meridian of Cape Aguillas; on the S. by the 60th parallel of lat., but the S. boundary is variously given by different authorities. From Cape Agulhas to Tasmania is some 6000 m., and this is the greatest breadth of the I. O. The two great bays on either side of the peninsula of India, the bay of Bengal on the E. and the Arabian Sea on the W., with its arms the gulfs of Aden and of Oman, belong to the I. O. But the Red Sea and Persian Guif, which communicate with the said arms by the narrow straits of Bab-ch mandeb and of Ormuz respectively, are separate seas. The Pacific Ocean can be separate seas. The Facility Ocean can be approached from the I. O. by means of the channels between the Sunda Is. and the Timer Sea, whilst the Mediterranean Sea in the N.W. communicates with the I. O. by means of the Sucz Canal and the 1. O. by means of the Sucz Canal and the Red Sot. There are two important straits, Mozambique Channel in the W., separating Africa from Madagascar, and Palk Strait in the E., separating India from Coylon. The I. O. is dotted about with thousands of is., some of which are of coral formation, as the Maldive, Chagos, and Cross groups; others, such as the Crosot is, and St. Paul's is., are volcanic. The chief is, in the W. are Madagascar, Mauritus, Bourbon, the Seychelles, and

Nicobar, belonging to Asia. In spite of these innumerable is., the I. O. is mostly navigable. The prin. large rivs. dis-charging thomselves into this ocean are the Zambesi, Indus, Ganges, Irahmaputra, Iranwadi, Godaveri, and Kistna. The bed of the I. O. attains to a depth of about 2000 fathoms in some parts. The mean temp. of the surface water is over 80° F. in all parts N. of 13° S. There are two warm currents moving southwards, the Mozambique and Agulhas currents, whilst a colder current in the E., called the W. Australian current, crosses the I. O. moving northwards.

Indian Orders of Knighthood are two in number, the Most Evalted Order of the Star of India, and the Most Eminent Order of the Indian Empire. The first was estab, in 1861, and besides the king and a grand master as the vicercy of and a graind master as the vicercy of India for the time being, was divided into three classes: Knights Grand Commanders (G.C.S.I.), knights Commanders (K.C.S.I.), and Companions (C.S.I.) The badge is worn pendeut from a light blue ribbon, with white stripes edgeways; the collar is composed of alternate links of lotus flowers, red and white roses, and unin branches enamelled in gold, with an palm branches enamelled in gold, with an imperial crown in the centre. The mautle worn is of light blue satin, lined with white. The motto is: 'Heaven's light our Guide.' The Order of the Indian Empire was instituted in 1877. In addition to the sovereign (grand master) and the vicercy for the time being, there are three classes in the order; Knights Grand Commanders (G.C.I.E.), Knights Commanders (K.C.I.E.), and Companions (C.I.E.). The badge is hung from a purple riband, and the collar is composed of elephants, peacocks, and Indian roses. The motto is Imperatricis Auspiriis.

Indian Pink, see PINK-ROOT. Indians of America. See AMERICAN INDIANA.

Indian Shot, or Canna indica, best-known species of the order Cannacce, and is to be found in all tropical countries. The plant receives its more resemblance of its seeds to shot. The seed resemblance of its seeds to shot. The rootstocks are very large, spongy, and jointed, and are used in Brazil for poultiess in tumours and abscesses. The rootstocks of some of the other species of Canaa are more valuable, yielding the starch called tous trs mois.

Indian Summer, season of mild weather on the Atlantic Coast and in the Central States of the U.S.A. usually occurring in Oct. or Nov., but sometimes in Doc. The sky is cloudless, the atmosphere hazy, and the temp. extremely mild. The tendency to extreme dryness causes a number of forest and prairie tree. This summer corresponds to what is known in England as St. Luke's Summer, which occurs at the end of Oct. or the beginning of Nov.

indian Territory, formerly a ter. of the U.S.A., about the size of Ireland. It lay

W. of Arkansas, and was separated from Texas by the Red R. This country was such censed to exist, especially reserved for the Ludian tribre by the gov of the U.S.A., and was assigned to them by Act of Congress in Commonwealth Relations Office, Div. B 880 The ter. contains furthe prairies and rich valleys, and is crossed by a large large large forms about 40 m. vide large large forms about 40 m. vide large large forms to be to forms about 40 m. vide large forms in chamber, see Rubber. broad belt of forest about 40 m. wide called 'Cross Timbers.' The climato is very pleasant and salubrious, and agriculture and cattle rearing termed the chief occupations. Indian Ter. was occupied by five tribes : the Cherokees, the Creeks,

indicator, term in chemistry to denote a substance used for the disction of minute amounts of materials. Commonly, the word is applied to those bodies that indicate an acid or alkaline reaction. One of the most frequently used Is. is



A CONSTRUCTION CREW OF CHOCAW INDIANS WORKING ON A STATE ROAD MEAR MUSICOGLE, OKLAHOMA

settled central ter. to the Union as the state of Oklahoma in 1907.

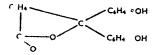
India Office, Brit. Gov. dept. set up in 1853 to administer the affairs of India. Its political head, the secretary of state for India, was assisted by an undersecretary of state. The I O, estimates were met from ludian Gov. funds. Prior to 1838 Indian affairs were conducted by the E. India Company, under the super-vision of a gov. Board of Control, whose president was responsible for Indian affairs in Parliament. On the transfer of India to the Crown in 1848 the secretary of State was assisted by a consultative council; this Council cessed to exist only in 1937 when some of its functions passed

the Chocktaws, the Chockesaws, and the littinus, a substance prepared from certain seminoles. Admitted with the white-litchens. This with alkalis gives a blue and with acids a red coloration, and in most cases the colour change is sharply defined. In titrating acids and alkalis, care has to be exercised in the choice of I. for example, in the case of carbonates, fitmus may not be used (unless the titration be performed so that all the carbon divide is expelled, since the latter has a distinct effect upon the L. Similarly, the is prepared synthetically require discretion in their wae, e.g. bhenoi phthalein is an excellent I. for strong acids and bases, but may not be used for the titration of a weak acid by a base, since the end-point is not sharp. Another frequently used I. is methyl orange, which is the sedium salt of an acid, helianthine. to a body of advisers. In 1947, when This is a sodium sait of an organic acid.

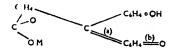
which in presence of alkalis is yellow, and in acid solution red It is however, phthalem in the free state, is represented necessary that the acid should be strong, by the formula otherwise no sharp end point can be obtained. Of other natural is may be mentioned cochine al and extracts of red cabbase and other vegetables but the greater number of the more recent pro-ducts by long to the benzen series

Much has been written corcerning the theory of in hectors with a view to ex-plaining the change of colour that occurs according to the scartion of the solution The first adequate explanation was offered by Ostwald who i used his views upon the ionic theory of clution (q v) According to this view an acid is a substance which in iqueous solution yields free hydrogen ions and conversely an alkali is one which yields free hydroxide ions Consequently a solution which con tains ions of 'n drogen and of hydroxyl in equivalent (mounts muy be regarded as This condition is realised in the ncutral case of pure water, which is only slightly dissociated into its component tons Further a strong acid or a strong base is one which in squeous solution is strongly dissociated On the other hand a 'weak sold ir is one which in solution is not dissociated to any great extent but remains non amused the assumption made by Ostwald in his theory to account for the behavious of Is is that the latter are either weak acids or weak bases, and that the change of coloni is due other to the presence of the non ionised substance or of a coloured ion. In the case of phenol plth den it is supposed that we are dealing with a weak and colourless and in the terms of the dissociation hypothesis, this is only disso clated to a slight extent and any nurse see in the concentration of hydrogen ion-such, for example, as takes place if a strong and be present tends to diminish the dissociation. In consequence, there is no colour change. If however, an alkalı such as sodium livdrovide be added the hydroxyl ions associate or combine with the hydrogen lons of the I, leaving cations of sodium and the anions of the I. The latter in this case are supposed to be coloured, and therefore the colour change is manifest Methyl orange acts as a very is manifest. Methyl oring aste as a very weak base, yielding in solution ted cations and small numbers of hydroxyl ions (OH), the undissociated substance is yellow. On addition of an acid the hydroxyl ions of the latter combine with hydroxyl ions of the latter combine with undissociated part of the 1 then ionises so that the red colour of the cations is seen. Addition of alkali on the other hand, suppresses the ionisation of the I which the refer shows the villoy colour. which therefore shows the yellow colour of the undissociated molecules. In addi-tion to the above theory there has been proposed a so called chemical explanation depending upon the structural differences existing between the lactoid or coloured form. It has been assumed that all coloured substances possess the guinonoid. structure (see QUIVO'R), and one view of the change of colour of is. is based upon

phthalem in the free state, is represented by the formula



its acidic properties being due to the testi of a phenolic (i.e. OH) group On treatment with alkalis, a change in structure occurs, and the salt is regarded as having the tollowing constitution—



where I is a univalent metal (The double bonds (a) and (b) present in the mole us are characteristic of the quino noid tructure) This latter view is in agreement with Hantech's theory of pseudo acids and pseudo bases, and is not entirely antagonistic to Ostwald's disso ciation by pothesis

A 1 1go tange of Is is now available, so that it is usually possible to select a suit able one for indicating any desired conable one for indicating any useries con-centration of hydrogen ions (see Hydro-centrol to Concentration). A universal in letter is a matter of various Is made in in such a way that it shows a series it colour changes over a large range of hydrogen ion concentration Universal Is are extremely useful in applied and techn il chem for the rapid estimation of hydrogen ion concentration

External is are sub-tances that are used to determine the end point of a reaction but must not be actually introduced into the reacting mixture since they would either cause undesirable hings or would be obscured by the are usually placed in drops on a white tale and areps of the reacting mixture are ron wed from time to time with a glass rod and added to the I on the tile, when the clour changes may be noted I have scene. Is an substances which

indi ite variations in hydrogen ion con entration by changes in the colour or intenty of the fluorescence they omit in daylish or ultraviolet light. They are very useful in determining the soldity of

very useful in determining the soldity of coloured or cloudy liquids, e.g. fruit juloss Indiction, term used in chronology to denote a period of lifteen years. The meaning of the word originally signified the imposition of a tay but it gradually crept into the calendar of historians, principally occlesiastics to mark time, thus, in the Middle Arcs, the dates of charters were expressed in is as well as in years of the Christian cra. The papal I, which has alone survived, was reckoned as starting Jan. 1, 313.

indictment, in criminal law, is a written ; accusation against one or more persons accusation against one or more persons of a crime preferred to, and presented upon oath by, a grand jury. All treusons and felonies, misprisions of either, and misdemeanour of a public nature at common law (e.g. seditious riots) are punishable on 1. The following is an example of an I. for larceny: 'Kent to wit: The jurors for our Lord the King upon their acts present that Blahard Lorge and their oath present that Richard Jones on the 1st day of Muy, in the year of our Lord 1901, four sacks of cont, of the gonds and chattels of William Hirst, feloniously did steal take and carry away: against the peace of our Lord the King, bis crown and dignity.' The formal parts are: (1) the commencement, the prin. leature of which is the venue or place from which the grand jury is drawn, and, generally, where the crime was committed; (2) the name of the accused; a missomer will be cured by the defendant pleading to the L; (3) the time when the offence was committed, but time is not material ex-cept where of the essence of the offence. as e.g. burglary, which must be between 9 p.m. and 6 a.m.; (4) description of the facts and circumstances essential to constitute the crime: an omission of an stitute the crime: an omission of an essential ingredient of crime is not cured by plea or verdict; (5) the places may, in some cases, be required to be stated; in others the venue in the margin (see the form), or co., or other div., is deemed to be the place for all facts set forth in the L.: (6) conclusion—errors in the formal cou-clusion will not vitiate an I. An I. may contain any number of counts, but not more than one offence can be charged as a rule in the same count. The object of including more than one count is to charge the accused either with different charge the accused either with different offences, or a previous conviction, or with being an habitual criminal (see CRIMINAL LAW), or to describe the facts of one transaction by different terms, so that if on the evidence they do not sustain one charge they may another. For example, a count for larceny is very often accompanied by a count for receiving As a rule, it is against the policy of our criminal law to charge different felonies in different counts, i.e. as opposed to charging different species or aspects of the same offence or transaction; and, as a rule, a count for a feliny is never joined with a count for a misdemeanour. Different misdemeanours may be charged in different counts, provided all the acts were sub-stantially one transaction, or constituted transactions essentially similar.

Indies, East and West, see EAST INDIES

and WEST INDIES.

Indifferentism, philosophical term, denoting the conception that all things in life are of indifferent value, being out-side the moral law. I. in this sense originated with the Stoics, who, in comoriginated with the Stoles, who, in common with the Cyplica and the Sceptics, held that only virtue and vice possessed absolute value, all qualities other than those two being indifferent. With the Middle Ages, the term came to have a second meaning, especially as it appeared in the teachings of Adelard of Bath. With him

I. came to mean the philosophy that life is either particular or universal, moral or immoral, according to the point of view from which it is regarded. Values can, therefore, only be indifferently related to any idea of absolute value. Kant used the term 'indillerent' as meaning extramoral, but I. has come now to be used simply to denote a negation of all values which in life, it is supposed, cancel each other out, leaving no balance of absolute right or wrong.

Indigestion, see DYSPEPSIA.

Indigirka, riv. rising in the Stanovo' highlands of Yakutsk in E. Siberia, and

highlands of Yakutsk in E. Siberia, and dowing into the Arctic Ocean. Length nearly 1000 m. Indigo, naturally-occurring dye-stuff obtained from various plants. Chief among these are species of Indigofera (e.g. I. sumatrana, from which the Bongal I. is prepared). I. is also present in the juices prepared). of Isatistinctoria, or the woad plant, which was cultivated in England until quite recently for the preparation of a fermentation vatused in I. dyeing. I. occurs in the form of a glucoside, known as indican. and this latter, on exposure to the influ-ence of atmospheric overen and a ferment present in the leaves of the indigo-bearing plant, is converted into the insoluble blue, indigotin, which is the essential principle of 1. The preparation of natural 1 is carried out as follows: the plant is cut down, steeped in vats for about twelve hrs. and the extract, which is of a greenish colour, separated and run into fresh vats, where it is stirred vigorously, so as to bring the indican into contact with the atmospheric oxygen. Insoluble I. is precipi-tated as a mud, which is collected, pressed, dried, and cut into cubes. Various components other than indigotin are present, the most important being indirubine, or indigo red, indigo green, and indigo brown.
The importance of natural 1. as a dyestuff has greatly diminished during the last few years owing to the perfection of various synthetic processes for its manuf. The success of these has been in large part due to the work of Adolf von Baeyer, who, by a series of masterly researches, eluci-dated the constitution of the dyestuff, and showed that it could be correctly represented by the formula

I, is now manufactured by a process shown in the outline in the diagram (page 47a). The synthetic product is considerably cheaper than the natural, and the traction of indigo are manufac-tured annually, particularly in Great Britain and the U.S.A. Many other dyes related to I. in composition have recently been discovered, though they do not yet rival I. itself in importance, DYES AND DYEING.

Indigo Bird (Cyanospica cyanea), small bird of the finch family, native of the U.S.A. It is about 5½ in. long, the adult father confessor. The relationship is a male is of a beautiful blue colour, whilst delicate one and depends much on indithe female and young are of a bluish-grey. I ridual personalities. On the whole, it It has a sweet song, something like that of

a canary, and frequents open spaces.
Indirect Rule, form of native administration which is characteristic of the Brit. tradition of colonial rule in the African colonies and also in Brit. Malaya (up to the time of the modern Foderation of Malaya). The principle of I. R. is that native institutions are the most appro-

delicate one and depends much on indi-ridual personalities. On the whole, it works well in this colony. Though the principles of I. R. are in accord with Brit. political sentiment, the actual evolution of the system has been more or less fortuitous; and it was the existence in tyanda of a well-developed political organisation in Buganda, and in N. Nigeria, of the Muslim emirates which herilitated the use of native authorities in facilitated the use of native authorities in printo agencies of gov. rather than any a way which could not have been consystem which seeks to transplant into the templated if experience had been con-

DIAGRAM OF THE PROCESS OF MANUFACTURE OF INDIGO

colony a replica of European political institutions. Conformably to the Brit. sense of trusteeship (see COLONIAL TRUSTEESHIP) and imperial experiences the policy of I. R. affords to native peoples not only an opportunity for self-development, but the possibility of adjusting themselves with the possibility of adjusting themsolves with the least avoidable disturbance of their own way of life to the novel conditions which by contact with the white men they now must meet. N. Nigeria is the original, and classical, example of I. R. which was devised by its conqueror and first governor, Lord Lugard (q.v.), nearly half a century ago. That sytom with but slight modifications persists there to-day. The typical political unit is the prov., in which the chief executive authority is a which the chief executive authority is a Muslim emir. To him a Brit. resident, who is the instrument of higher policy. acts as adviser, and in some cases as The most effective means of inducing

fined, e.g. to the backward societies of S. Nigeria or the weak political units of some parts of Brit. E. Africa. In the latter, however, in Tanganyika, Sir Donald Cameron rendered valuable services in extending the system of I. R. as he himself had helped to develop it in N. Nigeria. Nor, again does the system owe its origin to any preconceived theory of rule any more than does its opposite, direct rule: for all European govs, have been con-fronted by the problem of administering large colonial areas with a small European staff mostly ignorant of native custom and language, and in all cases they have been compelled, at least in the earlier days, to make use of chiefs or other available native authorities.

There has been much controversy over the relative merits of I. R. and direct.

native opinion to accept salutary innovations is the end sought in the system of 1. R., which relies on the appeal to the respect of a people for its own leaders, and its pride in institutions which it can call its own. The system of direct rule, on the other hand, considers rather how best to make quickly effective the decisions of superior authority, and sees its most effective agency in the council system, or in the training of chiefs as subordinate agents of the executive gov. In the Union of S. Africa the form which native administration has taken has been dictated by the conviction that Bantu development must be regarded chiefly in relaopment hust be regarded then in reaction to the place which the native must occupy in a society dominated by European institutions—hence the policy of segregation.' It is, therefore, understandable that S. Africa should prefer a system of direct administration in native system of unret administration in harve affairs, and should rely on the council system as the best for native areas with organs of local gov. It is also evident that the traditional authority of 1. R. would not be suitable for adoption as an agency for managing the large native pops, resident in the urb, centres of the Union of S. Africa. In S. Rhodesia the system of direct rule, though it rests in system of direct rule, though it rests in principle on the same basis as in S. Africa, is less developed, notably in the matter of suitable tribunals. Although the liberal provision made for native lands is a prominent feature of S. Rhodesian policy, the Dominion has not yet evolved a com-prehensive scheme for the regulation of netive affairs. Kenya colony, on the other hand, has in operation a fully-developed system of native administration founded on the creation of dist. councils presided over by an administrative officer, with native courts consisting of ad hoc nominated members. The adoption of this system of direct rule is not due to any assumption (as in S. Africa and in the Fr. Mrican colonies) that the welfare of the African colonies) that the welfare of the native lies in his rapid assimilation of the use of 'civilised 'institutions; but rather to the fact that the Kenya Gov. had no sufficient confidence in the traditional authorities to justify their exploitation whether as judicial tribunals or as agencies of local gov. But it is claimed for the Kenya system, not unjustly in the cir-cumstances, that it is the best adapted to a colony where Africans were continually in close contact with Europeans and also that it provides opportunities for educated

natives to take a part in local gov.

In the Fr. African term, the adoption of a system of direct rule was deliberate. Whereas Brit, sontiment favours the setting up of institutions which afford a training in the arts of self-gov, besides holding out the prospect of autonomy in the future, this forms no essential part of the Fr. theory of colonial administration. The Fr. goal is not native independence but a progressive association with Fr. methods of administration and with Fr. economic and social institutions. It is natural that, in this scheme of native development, the traditional indigenous institutions should not appear to have the

intrinsic value which the scheme of I. R. assigns to them. It is claimed, not with-out some justification, that this sytem gives the metropolitan administration a more efficient and more easily controlled agency for development than any other system to be found in operation in Africa, especially as the chiefs are now an educated class trained at one of the chiefs' schools. ('rities, however, of the Fr. system think that it is not to the Africans' own interests to pass as rapidly as possible from the use of his indigenous institutions and of his own language to a regime of Fr. civilisation and language. They hold, too, that the operation of the system must inevitably prejudice the development of a spirit of responsibility and initiative. the Belgian Congo the system of nativo administration is in a state of transition. The gov. is as convinced as the Brit, that a traditional chief can render better service to the administration than one who is appointed (as they are in some of the Brit. E. African colonies); but the Congo Gov. is not yet prepared to give the chief either the same judicial authority or the same position in local gov. as would be assigned to him in Brit. ters .- like the Fr., the Belgian Gov. has less hesitation than the Brit. In romoving their chiefs. More-over, with the exception of the Ruanda-Urundi, the Belgians have encountered few traditional authorities who have commanded a wide measure of support among their people.

In both lift. W. and E. Africa the prevailing policy is still that of 1. R., but is encounted ing ever more criticism. In W. Africa there has been no European colonising enterprise and consequently less direct impetus towards the development of responsible self-gov. than in E. Africa (especially Kenya with its relatively large European and Indian pops.); but the principles of I. R., 'if not necessarily incompatible with the avowed ideal of solf-gov, by representative institutions'—the tendency to-day is towards greater African (elected and nominated) representation in the legislative councils— are so far alien to it as to presuppose considerable modifications of native institutions before they can it into any scheme involving an elected parliament' (Lord Halley). Fr. policy on the other hand does not envisage a future self-gov. for their colonies; development in their case is regarded as adapting the colony to occupy in reality the position now assigned to it in principle as an integral part of France. This is emphalsed in the definition of the constitutional and logal status of the overseas dept. and ters, within the Fr. Union (see France,—Constitution).

The finante loyalties of the African have signed to it in the resulting the crop with in trade of visit in the resulting the crop with the position of the African have shown the control of the control of the crop with the position of the crop with the position of the constitution of the crop with the position of the principal ways to the position of the principal ways to the position of the position of the principal ways to the position of the principal ways to the position of the principal ways the position of th

The innute loyalties of the African have always been to his tribe or vil.; loyalty to the larger organisation which the white man has created can be built up only gradually. The use of the innute loyalties to introduce the idea of self-grv. was, as shewn, above, the essence of the fruitful principle of I. R., but the last ton years have seen a silent revolution of imperial policy, as a result of which the days of I. R. seem to be numbered. There are two

necessities of the coming generation for meant inseparable; cf. Paradise Lost, iv., which I. R. cannot provide. By the first 406, 'an individual solace.' Later it was principle of Brit. imperial rule the purpose used, as opposed to the word collective to of the suzerain power is to make available to the colonial peoples the characteristic benefits bestowed by gov. upon its sub-jects at home-that is, to-day, the mani-fold services of the welfare state. But as a method of administering social serwices the traditional tribul system of Africa is hopelessly inadequate. Secondly, the future political system must offer scope for the natural aspirations of Africans who, after contact with European political thought, expect as a general right those opportunities of public service and advancement which in the tribal system could only fall to them by the accident of birth. These two necessities, that of the carrière ouverte our talents and that of the large-scale administration dictated by the economics of the social services, in themselves mean the eventual doom of I. R. Yet the system cannot be hurried to exits own restraints upon power, variable yet always substantial—the restraints of custom, in which the system itself was rooted. All over colonial Africa these are now passing. The country restraining element cannot come solely from dependence upon a popular franchise. loyalty comparable to that evoked by the old tribal system must be engendered. Hence the efforts being made by the Brit. Colonial Office to educate Africans in selfgov. through participation in both legislative and executive responsibility at the local level. The test of their success will be the development of a true loyalty to social units of a national scale; this is the great problem that challenges the emancipating imperialism of the twentieth century. See Lord Lugard, The Dual Mandale in Tropical Africa (1th ed.), 1929; H. B. Thomas and R. Scott, Uganda, 1935; Sir R. Winstedt, A History of Malaya, 1935; L. S. B. Leakey, Kenya Contrasts and Problems, 1936; M. Perham, Natire Administration in Nigeria, 1937; C. K. Meek, Law and Authority in a Nigerian Tribe, 1937; R. Emerson, Malaysia: a Study in Direct and Indirect Rule, 1937; M. R. Dilley, British Policy in Kenya Colony (anti-imperialist the great problem that challenges the Policy in Kenya Colony (anti-imperialist Polery in Kenja Coomy (anti-imperialist polemic by an Amer. authoress), 1937; Lord Halley, An African Surrey, 1938; Sir D. Cameron, My Tanganyika Servee and Some Nigeria, 1938; M. Wight, The Gold Coast Legislative Council, 1947.

Indium, rare metallic element which occurs in certain specimens of zinc-blende. and resembles aluminium and thallium in its properties. Its symbol is In, its atomic number 49, and its atomic weight 114.8. It is a soft white metal, unseted on by air or water at ordinary temps... but on heating it burns to its sesqui-oxide with a blue-violet flame, which gives two characteristic lines in the indigo

part of the spectrum; hence its name. Individual (Late Lat. individualis, that which is not divided), originally denoted a thing indivisible in substance: Milton in his Animadegraions speaks of the individual Catholic Church. Hence, it also

nieau pertaining to a single person, as in the phrase 'individual effort,' or to any-thing of a striking and original character. In colloquial speech it is often used as a noun to denote man or person.

Individualism, see ANARCHISM SOCIALISM.

Individual Psychology, see under Psycho-LOG V.

Indo-China, or Farther India, also known as Chin-India, S.E. peninsula of Asla, extending southwards into the Indian Ocean. It comprises Tongking, Annam. Fr. Cochin-China, Cambodia, Laos, Siam, the Shan country, Burna, and Malacca. See under all these names, and also Lypo-Curva, Expression.

and also INDO-CHINA, FRENCH.
Indo-China, French, name under which
were incorporated the Fr. colony of
Cochin China, the Fr. protectorates of
Touking, Annam, Cambodia, and Upper
and Lower Lace, and Kyangolautyan and Lower Laos, and Kwangchau-wan, leased from China. Even before the Second World War Fr. Indo-China was in practice a federation of the Fr. colony of Corbin China, with its own governor, and of native states with varying forms of gov. After the capitulation of Japan (1945), when France resumed her relations with Indo-China, the political institutions with Indo-China, the political institutions had changed: a republic had been founded in Tongking which sought, by force of arms against the Fr., to exercise its authority over Annam and to extend its influence to Cochin China. The mechanism of the Fr. administration, mechanism of the Fr. administration, destroyed by the Jap. invaders, was only purtially re-estab. by the returning Fr. authorities (1945-46). Cochin China had ceased to be a colony under direct Fr. administration; a local gov. had been constituted and France was represented by a Commissioner of the Fr. Republic. Following a conference at Fontainebleau (Sept. 17, 1946) France appears to have recognised the formal status of the native republic of Viet Nam, comprising Annam and Tongking, but subject to that republic forming part of the Fr. Federation public forming part of the Fr. Federation of Indo-China. Before the entry of the Jap in 1911 the whole of Fr. ande-China was under a governor-general, whose seat was at more a governor-general, whose seas was at Hanol (Tongking) and who was assisted by a secretary-general. Each protectorate had, as its head, a resident-superior, but Cochin China, being a Fr. colony (represented in the Fr. Chamber by one Deputy) was administered by a governor. There was a Grand Council for Economic Affairs and a Gov. Council for the whole ter., and also a Grand Council for Economic Affairs for each state. In the protectorates, matters concerning natives come before a native tribunal, and a Fr. court tries matters affecting Europeans. In Cochin China, Fr. magistrates are responsible for justice to both Europeans and natives. Before the Second World War there was a military force of three divs., and a naval force of sloops, gun-boats, and surveying ressels.

Though Annam lies in the torrid zone,

Tongking on the whole enjoys an excellent climate. The heat, however, in June and China. Thus, from the time of Jules July, is sometimes almost intolerable. Ferry the Fr. steadily pressed their conplants abound in the mts. of Annam, and much fishing is carried on. Rice is the chief crop of both Annam and Tongking. Hindu States, decadent outposts of the mannament of Camballa mediate and Tongking. The products of Cambodia include rice, The products of Cambodia include rice, naize, beans, sugar, cotton, tobacco: also silk and pepper. There are schistone forest-clad tracts in the N.E., producing teak, bamboo, and other valuable timber, and in the N. and W. there are mts. containing fron, limestone, phosphate, sapphire, sandstone, and some copper. The prin, native industry is salting and prin. native industry is saiting and smoking fish left in ponds when the Great Lake empties, and which is filled up by the overflow of the Mekong R. The total value of Fr. imports in 1939 was 2382 million fr. and of exports, 3495 million. Of the exports France normally took nearly one-half. The univ. of Indo-China, situated in Hanol, was organised in 1917. Area and pop.: Cochin China, 24,000 sq. m., pop. (1926) 4,616,000 (cap Saigon, 111,000); Annam, 58,000 sq. m. pop. 5,660,000 (cap. Hue, 40,000); Tonkin(g), 43,000 sq. m., pop. (1940), 9,261,000 (cap. Hanol, 135,000); Cambodia, 67,550 sq. m., pop. 3,046,500 (cap Pnom Penh, 103,000); Laos, including Luang Prabang, 100,000 sq. m., excluding Luang Prabang, 90,000 sq. m., pop. 1,000,000 (cap. Vientiane, 10,000). Total 23,585,500 (including 41,000 Fr., 436,000 Chinese). million fr. and of exports, 3495 million.

Chinese). -It was owing to the work of Historu.missionaries that Fr. influence began in S.E. Asia. Siam was the first place in which it was felt, and from there it gradually spread to Tonking and Annam in the seventeenth century. Cochin China, the original colony, did not come under Fr. influence antil 1861, and then only as an indirect result of the Anglo-Fr. punitive expedition of 1860, which cul-minated in the sack of the Winter Palace at Peking. Angle-Fr. co-operation in this, the second China War, prevented this, the second chinas vial, provide seizure of Chinese ter, by either; but ill-treatment of Fr. and Sp. missionaries in Cochin China gave a pretext for a France-Sp. expedition, and after the Sp. with-drew, the Fr. admiral stayed on at Salgon, offew, the st. admiral stayed on at Saigon, administering the land through naval officers. This, the so-called 'rule of the admirals,' marked the true foundation of France's Far E. Empire and the real beginnings of Indo-Chine. A protectorate was then estab, in Cambodia (of recent years considerably expanded at the ex-pense of China). The Revolution more or less retarded progress and the Third Republic was opposed to further expansion. But Jules Ferry, Prime Minister from 1882 to 1885, determined to give France an empire in spite of herself, and backing up the adventurers on the spot, set out to acquire all Indo-China. Annam, Tongking, and Cambodia were united into a customs union in 1887. From 1893 to 1896 France gradually annexed Cochin (blina the Brit, had a hard task to portions of Siam E. of the Mekong R., and in 1900 the ter. of Kwangohau-wan, on the troops which had received part of their

Indian expansion; Annam and Tongking, Chinese in civilisation and sympathy. It was in these Indo-Chinese protectorates that Paul Bert, greatest of Fr. colonial miliators, founded the system of indirect miliators, founded the system of indirect rule, or association, later applied also in Morocco. The native rulers were preserved and all gov. was in their name; native law was modified, not abolished; and industry was promoted without expelling the cultivator of the soil. In a word, Indo-China was the greatest and most successful part of the Fr. overseas empire. It was surrendered to the Jap. during the world war in 1941. The Jap. had long recognised the strategic importance of Fr. 1-C. (The most important strategic points are Salgon, Cam-ranh and Halphong.) A submarine base was under construction at Cam-ranh in 1940, in order construction at Cam-ranh in 1940, in order to avoid the long, enclosed passage to Saigon. When France collapsed in 1940. Saigon. I-C. fell under the Fascist influence of the Vichy Gov (see France--llistory) and in July 1941 this gov., apparently unable to resist Ger. pressure, yielded to Japan's demand for bases in Fr I-C. At the end of that mouth a force estimated at 40,000 was landed, the intention of the Jap. being, evidently, to attack the Burma Road (q.v., and also Burma, Second World War Campaigns In).

During the Jap, occupation the Court of Hué (Annani) supposed that it would benefit by being of good terms with the invader, and the mandaring followed its example. A desire for independence on the part of the immature Annamites lay at the root of the violent and unjustified criticism of Fr. administration, for even to-day the whole of Indo-China still needs the technical, financial, and cultural help of France. But with the Jap. in general occupation it proved easy for the revoluin the inland regions, which were not effectively corupled by the Jap. The most important of these parties was the Vict Mush (an abbreviation for the name Viet Minh (an abbreviation for the name of the League for the Independence of Annum) of nationalist and communist tendencies. After the Jap, surrender, the S. part of I-C. was occupied by the Brit. and the N. by the Chinese. Probably the Annumtes believed that the Fr. were to be excluded permanently. They did not wish to become vassals of China. Hence they proclaimed their independence. The revolution broke out in Tongking, where a provisional gov, was constituted where a provisional gov. was constituted under the presidency of Ho Chi Minh, chief of the Viet Minh. From that moment the political situation became very confused, the authority of the Hanoi Gay, being the property sets. Gov. being insecurely estab., while in Chinese coast, was placed under the arms from the Jap. and were still, in some cases, commanded by Jap. officers and gendarmes. In Tongking the disorganised administration resulted in floods and famine. In Cochin China most of the inhab, wished their country to remain independent of Annam and Tongking or the Vict Nam Republic and the Fr. to continue the work they had begun. In Cantinue the work they had begun and the vorb-stem and the vowel-gradation, known by its Gor, term Ablaut.

Zend. safeth. These two groups are distinguished from one another by thoir treatment of certain guttural sounds. The calum group (Gk., Lat., Celtic, Germanic) has k a kh and ab where the people, who had remained staunch friends of France throughout the war. As regards Tongking and Annam, a provisional agreement was concluded (March 1946) with the ment was concluded (March 1946) with the Ho Chi Minh Gov., ensuring the pacific return of the Fr. troops in the larger transand maintaining the autonomy of those countries within the Indo-Chinese Federation and the Fr. Union (see France, Constitution). There was, however, bitter fighting between Viet Nam and the Fr. throughout most of 1917. Offers of sottlement made by the Fr. (Sept. 1917) were relocated and military consultant parantic. rejected, and military operations began in Tongking (Oct.) Further attempts to reach a settlement concerning the defence and foreign relations of the newly-formed Federation of Indo-China wore unsuccessful (1948). The Viet Nam republic, while ful (1948). The Viet Nam republic, while not objecting to membership of the Fr. Union, looked for the autonomy characteristic of membership of the Brit. Commonwealth. See P. Doumer, L'Indo-Chine Françuise, 1915; M. Happ, L'Immense Indo-Chine, 1928; T. E. Emis, French Policy and Developments in Indo-China, 1936; S. Levi, Indo-China, 1931; Virginia Thompson, French Indo-China, 1937; N. Smith, Burna Road, 1910.

Indo-European Languages. This term, first employed (in 1813) by the gifted physician, Egyptologist and philologist, Dr. Thomas Young, of Emanuel College, Cambridge, is to be preferred to 'Indo-Germanic,' as it is called by patriotic tier. philologist, or Aryan (so termed by super-philologist, aryan (so termed by super-

philologi-ts, or Aryan (so termed by super-patriotic Gers.), which is now technically reserved for the Indo-Aryan branch (see below). This family comprises most of the languages spoken in Europe and some of languages spoken in Europe and some of those of Asia, particularly the Indian sub-continent. The speakers of these lan-guages have for many centuries been the leaders in the hist, of the world; their literatures are amongst the greatest. The development of these languages has been the most varied and the most rich. the most varied and the most rich. The languages belonging to the three man branches of this family, Germanic, Romanec, and Slavonic, nowadays are spoken by c. 325 million people, c. 2.0 million and c. 200 million respectively. On the basis of a great deal of evidence, philologists have succeeded in constructing the Proto-Indo-European language and a 'family-tree' of the well-attest of Indo-European language. Indo-European languages, although not all the scholars agree as to the place in which one or another of these languages (e.g. Hittite or Armenian) should be placed.

The main features of the L.-E. L., at least in their early stages, are as follows: A word normally consists of three elements, root, prefix, and ending: the grammatical relationships are generally

sub-families, termed from the word 100, in Latin centum (pron. kentum), and in Zend. salem. These two groups are distinguished from one another by their treatment of certain guttural sounds. The centum group (Gk., Lat., Celtic, Germanic) has k, g, kh, and gh, where the salem group (Indo-Iranan, Armenian, Balto-Slavonic, Albanian) generally has 8, 2, k or g or h.

8. 2, k or q or h.

One of the many vexed problems of the Indo-European languages is that of Hittite. The Hittites inhabited Asia Minor and N. Syria from the third to the first millennia B.C., and during the fourteenth and thirteenth centuries B.C. con-stituted one of the chief empires of the Near East. The most important stage in the recovery of the long forgotten enume of the Hittites was the discovery in 1906 07, at Bogaz Koy (Boghaz Keul) the anct. Hattushash, cap. of the empire, of the rich royal archives containing over 20,000 documents written in cunciform (see Cunfiform Writing) on clay tablets. Some of these documents are written in Accadian language, but the bulk is written in Hitlite. This language has been recognised as an Indo-European speech since its decipherment in 1915 by the Czech scholar Bedfich Hrozny. The emment Hitlitologist Emil Forrer, on the basis of 'archaisma' in Hitlite as compared with other anct. L.E. L. has suggested, since 1921, that Hitlite broke away from the parent speech before any of the other known L.-E. L. The Amer. linguist E. H. Sturtevant accepted and developed this suggestion. According to hum, Hitlite and 'Proto-Indo-European' are both descended from an earlier lan-Some of these documents are written in are both descended from an earlier language, by him termed 'Proto-Indo-Hittite. Besides, in Sturteyant's opinion five other languages of Asia Monor, known from various inscriptions or from orations in the Hittite documents, are closely related with Hittite. Apparently all these early Anatolian languages preservo certain features that have been lost in all the I E L Sturtevant, thus, suggests the following family tree .

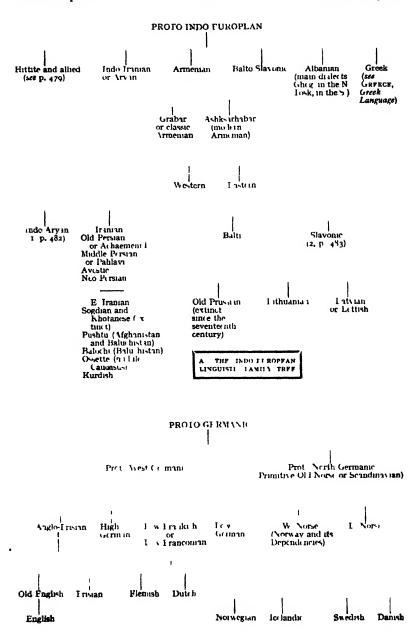
Proto-Indo-Hittite Proto-Indo-European Proto-Anatolian Hittito Luwian Lycian Lydian

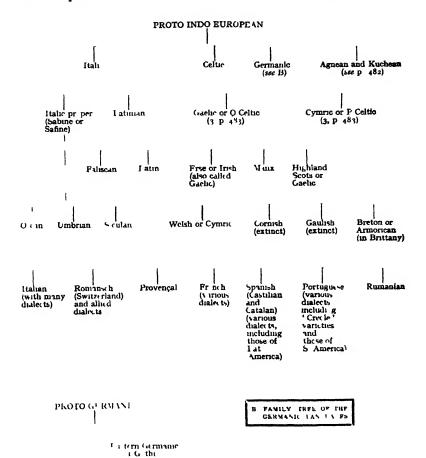
It may be noted that until recently Lycian and Lydian were considered as non-L.-E. L.

Hieroglyphio Hittite

Palaic

Recent excavations and studies have recovered other forgotten languages belonging to the Indo-European linguistic grammatical relationships are generally family. In the first seven or eight cen-expressed by means of inflection; and the turies of the Christian Era, Chinese





Vandalic Visigothu Ostrogothic or W Gothic or L Gothu (see under Gothic Language and Script)

Eastern Turkestan (now called Sinkiang) | almost wholly a sandy waste to-day was a land of smiling cities with rich sanctuaries and monasteries stocked with magnificent libraries,' This anct. 'melting pot ' of peoples of quite different forms of speech, script and religion, is now inhabited by a sparse pop. mainly of Turkish tongue and Muslim religion. MSS, discovered since 1890 revealed that in the latter part of the first millennium A.D., the pop. living between the R. Tarim and the Tienshan Mts., including the ters. of Turfan, Qara-hahr and Kucha, spoke a language belonging to the centum group of the Indo-European family. This language, however, presents sev. features not paralleled in the other L-E. L., and its relationship with the other groups has not yet been sufficiently cleared up. It was assumed, at first, that the new language was the speech of anct. Tokharistan and it was, therefore, termed Tokharian, but apparently anct. Tokharian was a non-Indo-European form of speech. Besides the new language is not uniform; two dialects or languages can be distinguished. which nowadays are termed Agnam and Kuchean. Other newly recovered languages preserved in MSS. discovered in Turkestan, are Khotanese, which was spoken in the anct. kingdom of Khotan, and is now known to have been the easternmost Middle Iranian (or Persian) form of speech; and Sogdian, another E. dialect of Middle Iranian, which was widely used in Ceutral Asia for many centuries, and particularly in the second half of the first milleumum A.D. which nowadays are termed Agrican and half of the first milleumum A.D.

The Indo-European 'family-tree' with particular reference to the Italic and Celtic languages is printed on p. 4.0, with the family-tree of the Germanic languages. Various detailed questions are not taken into consideration; amongst others, the into consideration; amongst others, the problem of the Thrace-Phrygian group of languages, which certainly were Indo-European, but too little of them is known to give them the exact place in the family-tree. Also very little is known about the linguistic allillations of anct. Illyrian, which was spoken on the E. coast of the Adriatic Sea: the Messapii, who inhabited in pro-Rom. times the It-region now known as Apulia; the Piccui, who lived on the central It. coast of the Adriatic, and the Veneti, who inhabited the N.W. coast of the same sea, apparently belonged to the same linguistic group as the Illyrians. Some scholars consider Armenian and Albanian, which apparently are isolated independent branches of the Indo-European family, as remaints of a large group, termed Thraco-Illyrian, including anet. Thracian, illyrian and allied languages, anet. Phrygan, and Scythian, to the N. of the Black Sea.

The following are a few major points to

European people of the Indus Valley). Indeed, besides the Indo-European languages, there are various Dravidian languages (see under LINQUISTIC FAMILIES) and Kolarian or Munda languages spoken over the whole of Central India, which are considered as having the Austro-Asiatic common substratum. Even the Indo-Aryan branch is the most numerous and complicated of all the Indo-European branches. In the last conturies B.C., Sanskrit. which was originally a refined form of the language of the 'Madhyadesa' (the Indian homeland), developed into an artificial, literary language, the language artificial, literary lunguage, the language of the Brahman civilisation. For many centuries it was the exclusive literary language of N. India. The Muslim invasion of India after A.D. 1000, followed by the final conquest, towards the end of the twelfth century, extinguished the Hindu political power (revived only in 1947) in N. India, and brought into use the Arabic Exercise script and the Parsine influence. Persian script and the Persian influence on the Indian languages. Roughly about this time, the Indian Prakrits or vernaculars began to develop into literary languages. The most important of them is W. Hindi (71 million speakers): one of its various dialects, Hindustani, which was primarily the language of the N. Doab, Most carried over the whole of India by the Mostems. The literary Hindustani became the modern literary language of India; cirly in the seventeenth century it was already known in England that Hindustam was the lingua franca of India: it is believed that nowadays it is India: it is necessary that increases, as a spoken by some 65,000,000 people, and it is understood by nearly 150,000,000 people. One form, Urdu, which makes a free use of Persian and Arabic words, and employs the Persian-Arabic script, is used chiefly by Moslems and has become the official language of the new State of Paki-stan. The other form, Hindi, is free from Persianisation, and owes more to Sans-krit; it is used by Hindus and is usually printed in the Deva-nagari character, the script of Sanskrit.

Hindi (2),000,000 speakers) has three main di dect. Ewadhi, Bagheli, and Chhattegarhi. The chief languages of the central group are: (1) Funjabl (c. 17,000,000 speakers) also spoken by the Brit. Sikh soldiers. The dialects are W. Punjabl or Lahnda, c. 7,000,000 speakers with twenty-two dialects. (2) Sinthi c. 3,500,000, with a dozen dialects. (3) Rajasthanl, c. 18,500,000 with the dialects of Malvi (1, 100,000), Marwari, and many others. (4) Gujarati, spoken by 11,000,000 people. (5) Kashmiri 2,000,000 speakers whose main dialect is Kashtawari), is the most north-westerly language of this branch. Palari (' of, or belonging to, the mountains') is spoken by c. 2,500,000 people in Supa dalaksha, The following are a few major points to be considered in connection with the Indo-European family-tree.

(1) The inguistic problems of India are rather complicated. Her numerous languages and dialects belong to at least three main linguistic families (without staking account of the still undeciphered written documents of the pre-Indo(divided into sev. dialects) is spoken by c. 50,000,000 people; Bihari (main dialects; Maithili or Tirhuti, Magahi and Bhojpuri) is spoken by c. 40,000,000 Bholpuri) is spoken by c. 40,000,000 people; Oriya, comprising many dialects, is spoken by c. 10,000,000 people; and Assame c. the most E. Indo-Aryan language, is spoken by c. 2,000,000 people.

Only three Indo-Aryan languages are

spoken in S. India, the most important of them being Marathi with c. 19,000,000 speakers; interesting is Konkani, a Marathi speech, over 1,500,000, spoken to the Desirouses colony of diag and sure in the Portuguese colony of Goa and sur-rounding dists., and mainly written in Rom. characters as adapted by the Portu-guese priests; Saura-hiri is spoken by c. 125,000 people, mainly in Madura and Madras; and Hindustani is mainly Madras; and Hindustani is mainly spoken by the Moslems. Sinhaleso (the language of Ceylon), spoken by c. 4,000,000 people, must also be mentioned: although there are still some who maintain that it is essentially a Dravidian language, it is is essentially a Dravidian language, it is generally admitted by serious scholars that it is an Indo-Aryan speech strongly influenced by Dravidian. Finally, itomani, the language of the gypsics, in various parts of Europe and Asia, corprising numerous dialects strongly influenced by local languages, is generally considered as an Indo-Aryan language.

(2) Silavone. The carliest, extant Old Slavone downwarts belong to the end of

Slavonic documents belong to the end of the tenth and to the eleventh centuries A.D. They are coucled in a language termed 'Erclesiastical Slavonic,' or 'Old Church Slavonic' or else 'Pannonian Slavonic' or 'Old Bulgarian,' and are written in the Glagolithic or the Cyrillic written in the Giagolithic or the Cyrillie soripts (see under Alphaber). The modern Slavonic languages can be divided into three geographical groups: Eastern (Russlan, White Russlan, and Ukrauman). Western (Polish, Czech or Bohemian, Slovak, Wend or Serblan, and Lusatian, and Southern (Bulgarian, Serbo-Croatian, and Suvens).

and Slovene).

(3) Celtic. The Celtic branch is com-(3) Celtre. The Celtic branch is commonly divided into two groups of languages, the Gaelic and the Cymric, which, respectively, are also termed Q-Celtic and P-Celtic: In the former group, the 'Proto-Celtic' combination of a guttural with a w-sound (like kw or gu) remains kw changes into p or pw.

See Meyer-Lübke, (frammatik der roman-

ischen Sprachen, 1890-1902; K. Brugman, Grundriss der rergleichenden Grammatik der indogermanischen Sprachen (2nd od.), 1897–1916; Kurze vergleichende Gram-matik der indogermanischen Sprachen, 1897-1916; Kurre veryteienenae Grammatik der indoormanischen Sprachen, 1904; H. Hirt, Die Indogermanen, 1905; H. Pedersen, Vergleichende Grammatik der keltischen Sprachen, 1909-1913; J. Schrijnen, Einführung in das Niudium der indogermanischen Sprachussenschaft (trans. from Dutch), 1921; A. Meillet, Le slave commun, 1924, Grammaire du vieux-perse (2nd ed.), 1931, and Introduction à l'étude comparative des langues indoeuropéennes (7th ed.), 1931; K. Sandteid, strongholds of Indonesian republicanism. Linquistique balkanique, etc., 1930; E. A widespread movement of local national Bourclez, Eléments de linquistique romane, ism was encouraged, especially in Java, 1930; E. Hirt, Handbuch des Ugermants- by Japan during the Second World War,

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Indo-Germanic Languages, see INDO-

EUROPEAN LANGUAGES. Indonesia (Indo- and the Gk. word i fore, an island) is a term sometimes used 1976., an island) is a term sometimes used to designate the E. Indies, comprising Borneo, Indo-China, Java, and the Dutch E. Indies, Johore, New Guinea, Malay, Penang, Perak, Philippine Is., Singapore, Sumatra, and Tongking. Archæological research in I. has been carried out under both Eng. and Dutch supervision. In the Malay Peninsula stone axe-heads of neolithic culture have been discovered. medithic culture have been discovered, but no knives or spear-heads. These instruments were probably made of bamboo, owing to the lack of suitable stone, and hamboo spear-heads are still in use among the Malays to this day. The exploration of Malayan caves has revealed, often within about 4 ft. of the surface, parts of skeletons—remains of feasts, all remingly of extant animals—cord-marked pottery, and ground stone implements. Archeological research has estab. a considerable similarity between these remains and those found in Indo-China. Bronze adze-heads have been discovered in Negri Semblian, and anct. iron tools, probably mining implements, are also found, but are extremely rare. Indonesian art is practically restricted to design, and among the is, very little sculpture ranning, while what there is shows the religious influence of Indian art. Design has found expression in the patterns with which bamboo combs are decorated and also the belts worn by the women, who attribute to them a magical significance. The pottery also is rudely decorated. Gold and silver fligree work, of extreme intrincey, is made in Malay, 'pper Perak, and the Patani States. Filigree work is used to ornament dagger-hilts, rings, brooches, buttons, kris-sheaths, pendants, car studs, and beads, being often coloured a dark red or deep yellow. Button-making is a craft widely practised in I. The buttons are made of silver on which a design has been indented. The back-ground is then filled in with an extremely durable black enamel, which, after firing and finishing, will neither crack nor bend. The enamelling is known as niello ware. also Indonesia (Dutch); and NEO; Dutch East Indies; Java; Sec

BORNEO; DUTCH EAST INDIES; JAVA; MADURA; SUMATRA, etc. Indonesia (Dutch), the Netherlands E. Indies considered in the light of the independence movement, more particularly associated with Java and Sumatra as the

This] when her defeat became inevitable. movement made further progress in 1945 taking advantage of the time lag between taking advantage of the time lag between the sudden Jap surrender and the arrival of such allied troops as could be made available to disaum the Jap, forces of occupation. Having obtained arms and assistance from the Jap, garrisons the Javanese proclaimed an independent gov. Guerilla fighting broke out in Java and in Feb. 1946 the Netherlands Cov. declared its readiless to recognize Indein Feb. 1946 the Netherlands Gov. declared its readiness to recognize Indonesian independence and to further the estab. of an Indonesian state po-sessed of full purtnership rights within the Netherlands kingdom. The Dutch Gov. also declared that the new 'Indonesian Commonwealth' should manage its domestic affairs in complete freedom through its own cabinet and a demonstrate. through its own cabinet and a democratic legislative body in which Indonesians would hold a majority. Formal diswould hold a majority. Formal dis-cussions initiated in Java, through the mediation of Sir Archibald Clark Kerr, mediation of Sir Archibaid Clark Kerr, were continued in Holland, where, however, they made next to no progress. Law and order were estab. In Java, however, as the number of places taken over by Brit. and Dutch troops increased. The ters. of the 'Great East,' Borneo, Bangka and Billiton were handed back to the Dutch E India administration (July 13, 1946) and a conference was convened by Llent Governor Gangeri vaned by Llent Governor Gangeri vaned vened by Lieut-Governor General van Mook (July 16) to enable the is, outside Java and Sumatra to discuss their future relationship with the Netherlands Gov., the real purpose of the conference being to check the Republican' (laim to speak for the whole of 'Indonesia,' Resolutions, however, were passed in favour of a federation of the whole of Dutch Indonesia with the maximum of autonomy for each of the four constituent states-Java, Sumatra, Borneo, and the Great East. In the meanture Dutch Indonesian negotiations had been long suspended but in Nov. the two sides agreed on terms of settlement embodied in the 'Cheribon Draft Agreement, a political accord as it was described by the Dutch Gov, which was initialled by both sides on Nov. 15.
This agreement for the formation of the 'United States of Indonesia' held out an illusory promise of a now era of pear e and co-operation, for there were those on both sides who were opposed to any com-promise. In Holland, ey the ('atholic and Calvanst parties were strongly opposed to any concession to the claims of a secular Asiatic nationalism. The Agreement was, nevertheless, signed by both sides on March 25, 1947, and a truce agreement which had been concluded in Oct. 1946 was formally implemented by a cease-tire order, which however, did not stop acts of violence by separatist move-ments in W. and N.W. Java. On May 27, 1947, the Dutch commissioner general in Java sent a Note to the Indonesian Republican Gov. demanding that the gov. be reconstructed to form a central apparatus of the future Federation and that organs be created for co-operation with the Dutch Gov. in regulation of foreign relations and economic questions and the control of

relations with all parts of Indonesia not belonging to the republic. The republican gov. agreed to co-perate but blauned the Dutch Gov. for the continuation of hostlittes. The Indonesian promice (Sjahrir) was unable to got the support of his own Socialist party for the acceptance of these proposals and resigned. The next day President Sockarno announced his acceptance of the general lines of the Dutch Note and the new premier (Sjahrifuddin) also agreed to the proposals.

But the republicans failed to keep law and order in the areas nominally under their control with the result that Dutch troops then occupied all republican build mgs and public services in Batavia. Van Mook's defence of this action was that the Republicans were unable or un willing to honour other the truce or the willing to honour other the blue of the agreement or to liberate the 100,000 per sons (Chinese, Indians, Dutch, etc.) still concentration camps. The gathered in concentration camps. The Dutch forces made rapid progress in occupying areas in N.F., and central Java. and on July 21 President Sockarno broad cast an appeal to solve the problem with out war saving that the republican gov, were prepared to put their case before the United Nations. On the request of the Indian Gov. through Paudit Nehru, the Indian Gov. through Paudit Nehru, the Indonesian case was taken up by the Security Council (July 31) and a United Nations' committee was sent out to report. The committee put forward proposals (Dec. 25) but these were rejected by the second of by both sides. During 1943 it continued to be the aim of the Dutch to create a United States of Indonesia that would be both stable and independent, and to that end they made plans to setting up an appropriate federal constitution. But they could not secure the co-operation of the republicans, nor did any greater measure of success attend the efforts of the United Nations' Good Offices Committee, which remained in Indonesia for many months. The Dutch Gov. con tended that they had suffered provocation at the hands of the republicans and that the subversive forces inside the republic would, unless promptly suppressed, ondanger the whole foundation of the United States of Indonesia. This contention, however, gained no support from the United Nations any more than did the Dutch offer to seek a ruling of the Court of International Justice on the Security Council a competence to intervene in what the Dutch is garded as a domestic dispute. No compromise seemed possible, for the Dutch case and that of the republicans were poles asunder: the Dutch argued that the development of the Indonesian Federation was threatened by the un-willingness of the Republic to join with the other Indonesian states as an equal partner, whereas the republicans, as alwars, wanted a unitarian state under republican control. This forced the Dutch gov. to press for a speedy solution of the problem and, accordingly, on Dec. 19 the Dutch, in violation of the truce which had been arranged by the Good Offices Committee, resumed military action against republican ter. Jokjakarta

was quickly captured by airborne forces and Dr. Soekarno and sev. republican ministers were arrested. By Dec. 30 all major this, were in Dutch hands, the whole major that were in Dutch hands, the Whole operation having been eleverly planned and executed. These military operations were, however, strongly condemned by most members of the United Nations Security Council. In Jan. 1949, the Gov. of India Invited the govs. of thirteen Asian countries to a conference in Delhi to consider the Indonesian problem— Pandit Nehru describing Dutch action there as 'unabashed aggression.' The conference, held on Jan. 23, made firm but moderate recommendations to the Security Council of the United Nations, among them being that all Dutch troops should be withdrawn from the whole of I. by a date to be determined by a United Nations' authority and that power over the whole of I. should be completely transferred by Jan. 1, 1950 to the United States of Indonesia, whose relationship with the Netherlands should be settled by negotiations between the two parties. After discussions lasting sev. weeks, a preliminary agreement was rewhed preliminary agreement was rowhed (May 8) between the Dutch and the Indonesian Republican acceptions which met at Batavia under the auspices of the United Nations committee for Indonesia. The proposals under consideration were the return of the Republican gov. to Jokjakuru, the cessation of all guerilla warfare, and a round-table conference at the Hague. This compromise seemed to be the first step on the road to a settlement of the Indonesian question.
Indoor Gardening, see under Window

GARDENING.

Indore, native state of Central India in the dominions of the Maharajah of Holkar. It covers an area of 9900 sq. m., and is It covers an area of 9900 sq. m., and is bordered S. and W. by the ters, of the Bombay Presidency, and N. and E. by those of Scindia and the rajabships of Dhar and Dewas. It is traversed in the S. by the Satpura range, and in the N. by the Vindhya Mts., and between these are the dists, watered by the Nerbudda. There are some fertile plains, and most of the country is well wooded. The prevailing religion is Mohammedan. The chief products are wheat, timber, tobacco, raw cotton, and opium. The chief tn. and cap. cotton, and optum. In order to, and cap, is Indore, situated in a fine undulating plain. It has a new first-grade college, a Sanskrit College, sev. high schools, and a scheme for compulsory primary education is estab. A Botanical Institute for the improvement of cotton has been estab., and a number of spinning and weaving mills. Other places of note are the old garrison this, of Mhan and Mehidpur, Mhoysur, and Mandlesar, and the ruined mills. Other places of note are the old garrison that, of Mhan and Melidpur, Mhoysur, and Mandlesar, and the ruined city of Mandu. The present Mahurajah, who succeeded to the throne in 1926, on the abdication of his father, Maharajah Tukoji Rao III., was educated at an Eng. school and Oxford. He married, in 1924, the daughter of the Junior Chief of Kagal. The maharajahs have shown great loyalty to Britain, and during the two world wars I. gave all the help it could to the Brit. Gov., both in money and mon,

who fought on many fronts. There is a state railway, with the prin. station at Indore tn., and sev. other railways cross the country. State savings banks have been introduced. The ann. revenue is £300,000. Pop. (1941) 1.514,000.

Indorsement, writing on the back of an instrument something relative to and affecting the transaction evidenced by the or chaque payable to order operates to transfer the right to payment to the indorser or person to whom the indorser hands the bill or cheque. The I. of a negotiable instrument may be in blank, i.e. where the name of the indorser only is written on the instrument, the effect being that the instrument becomes payable to bearer; or 'conditional,' i.e. the property or conditional, i.e. the property in the instrument is transferred subject to some contingency being fulfilled; or 'qualified,' i.e. which enlarges, restricts, or otherwise qualifies the liability of the mdorser; or 'special,' where the name of the indersee is inserted; or 'restricts the appropriation of the indersee is inserted; or 'restricts the state of the proportion of the indersee is inserted; or 'restricts the appropriation of the indersee is inserted; or 'restricts the appropriation of the inderse is inserted; or 'restricts the appropriation of the inderse in the inderse inderse inderse inderse in the inderse ind tive,' i.c. it restricts the negotiability of the instrument to some particular purpose or person.

Indra, in Indian mythology, the ruler of the bright firmament who stands at the head of the heaven of the gods. In Vedic poetry he is represented as performing wonderful deeds for the benefit of good men, at the same time possessing all the attributes of a warlike god

Indre, dept. of Central France, lying S. of the dept. of Cher, and covering an area of 2664 sq. m. It was formed in 1790 from parts of the oil provs. of Berry, Orleannels, Merche, and Touraine, and is named from the riv. Howing through it. The surface consists of a large plateau divided into three dists. viz. the Boischant, a well-wooded plain abounding in marshes in the S., comprising nearly seven-tenths of the entire area; the Champagne, a fertile dist in the N., producing cereal crops; and the Breune in the W., between the ther and crouse, a region of moors, marshes, and ponds, formerly unhealthy, but now considerably inproved by means of drainage and afterestation. The Champagne dist. afterds excellent pasturage for sheep, which produce first-rate wool. The chief products are chestnuts, grain, the vine, sugar-beet, wheat outs, potatoes, turnips, etc. Much poultry is also reared, amongst the prin. manufs, are paper, leather, cloth, and pottery. The dept. is heather, cloth, and pottery. The dopt. is divided into the arrons, of Châteauroux, Le Blace, Le Chatre, and Is-ouden. Châteauroux is the chief tn. Pop. 2.2,000.

orchards and vines between the Loire and Vienne: the billy and unproductive plateau of Ste. Maure; and the marshy ter. of the Breune. The chief products ter. of the Breune. The chief products are grapes, apples, beetroot, grain, and homp, and there are manufs of paper, slik, rope, and bar-iron. Mecalithic monuments are numerous in the dept. The dept. is divided into the arous, of Tours, Chinon, and Loches. The chief tn. is Tours. Pop. 319,600.

indri (Indris brevicaudata), sub-family of the Lemuridae, large monkey-like of the Lemuridæ, large monkey-like lemurs inhabiting Madagascar, especially the E. coast forests, first discovered 1780. They are black and white in colour, of diurnal habits, and live chiefly on fruit.

See LEMUR.

Induction, Eng. Church ceremony for giving possession of a benefice to a clergyman. The I. is performed after a mandate from the bishop to the archdeacon (or dean and chapter). The inductor takes the clergyman's hand and lays it on the key of the church door. The clergy-man is then admitted, and tolls a bell as a public notification to his parishioners. The incumbent's powession is completed by 'reading himself in,' reading the Thirty-nine Articles, and making formal vows to accept them and conform to the rules of the Church. Scottish ministers are or-dained by the Presbytery ceremony. The ceremony which includes a laying on of hands, is conducted by the 'Moderator,' the clergyman appointed to look after the

church during the interregnum or vacancy.

Induction, in logic, the process of real inference, or the proceeding from the known to the unknown. This operation of discovering and proving general proposi-tions is contrasted with deduction, which is the method of applying general proposi-tions once discovered to such particular cases as are considered to be within the scope of the estab. propositions. The great exponent of deductive principles. Aristotle, neglected I., and only identified it with a complete enumeration of facts. Bacon's Norum Organum contains little true I., though it contains directions for drawing up the various kinds of lists of instances. Whewell's Philosophy of the Inductive Sciences (1840) marks a distinct advance, and shows a due appreciation of the cardinal point neglected by Bacon the function of theorising in inductive research He shows that science advances only in so far as the mind of the inquirer is able to suggest organising ideas whereby experiments and observations are made to dovetail into an intelligible system. J. S. Mill in his System of Logic, ratiocinative and inductive (1843) ignores the constitutive work of the mind, and regards knowledge as the merely passive reception of impressions. Recent advances in mental science have estab. the great importance of femal clearly show that the mental science have estable the great importance of i., and clearly show that the most valuable faculty in scientific inquiry is that of suggesting new and valuable hypotheses. See also Logic. See J. S. Mill (above) and A. Lalande, Les Théories de l'induction et de l'expérimentation, 1929.

Induction and Induction Coil, see Fractivities. ELECTRICITY - Electro-Magnetic Induction.

Induction Furnace, see under METAL-LURGY (METALLURGICAL FURNACES).

This term, in Rom. Cathindulgence. This term, in Rom. Catholic theology, signifies the remission of the temporal penalty of sin, grunted to a repentant sinner by Church authority. The I., however, is nover considered a sacramental remission of the sin itself. Although the first recorded instance of the use of the word indulgence was in the eleventh century by Alexander II., the institution was found in full development during the wars of the Crusades, the serving in which was accounted an equivalent substitute for penance, provided always the service was from motives of devotion and not from mere greed or love of glory. Later, military service as a condition for is, was replaced by pilgrimages to certain great shrines. I.'s may be given by the Pope, and by primates and bishops within the limits of their jurisdiction. In modern times they are usually attached to works of devotion or good works of any kind in the form of remission of part or all of what would have been the old canonical penance for sin.

Indulgence, The Declaration of, issued by James 11. of Great Britain in 1687. It had for its ostensible object the suspension and for its extension object the suspension of all laws tending to force the consciences of the king's subjects—its real object being to rehere the Rom. Catholics. It was very unpopular, and the culminating point of the universal disastisfaction was tended in the heartest of the control of the control of the second of the testified in the refusal of the seven bishops to order their clergy to read it aloud from

their pulpits.

Indus, S. constellation between Grus and Puvo, first noticed by Bayer in his Uranometra, pub. in 1603. The chief star (of 3.2 magnitude) gives a solar spectrum. Near by are the clusters of Tucana and Telescopium.

Indus, great riv. of N. India, rising in the Kailas mt. group, near the sources of the Brahmaputra, Sutlel, and Gogra. For upwards of 500 m. it flows in a N.W. direction: at first by the foot of the Himalayas on the Tibet plateau, then through Kashmir, between the chains of Ladakh in the N., and of Zanskar in the S., amid mt. scenery unmatched by any in the world. Here it receives the waters of the Shyok, the largest trib. of this its upper course. As it leaves Kashmir to enter the l'unjah it turns to the S.W., and emerging from the mt. regions is joined at Attock by the Kabul R., from Afghanistan. From this confinence it continues to run in a S.W. direction for another 1000 m. till it enters the Indian Ocean. About the middle of the Indian Ocean. About the middle of this lower course through the plains it receives one great affluent, composed of the united waters of the Sutlej, Chenab, Ravi and Jhelum, which, with the L. itself make the five Rivers or Funjab. It loses much water from passing through desert regions, but is navigable up to Attock at all seasons. During the melting of the mt. snows, from May to August, destructive floods often occur. It is spanned by sov. bridges, even in its uppor mt. courses—the iron railway bridge at Attock and the cantilever 'Lansdowne Bridge' at Sukkur being triumphs of Year

Total

INDUS VALLEY CULTURE.

Industrial Accidents. According to the Workmen's Compensation Act of 1923 industrial accidents are 'accidents rising out of or in course of employment.' Such accidents are classified according to their accidents are classified according to their severity whether the results are fatal, and if non-fatal whether permanent or temporary. A table of frequency rates for 779 factories employing 820,325 persons (or 12-8 per cent of all Brit. factory employees) gives a rate of 2-27 for all the listed industries during 1917 and is useful as a guide to the industries producing most accidents. The tables show the percentager platonships of totals of accidents centage relationships of totals of accidents for 1942 and 1947 to the accidents in 1937. form, and decoration. Good design is

engineering skill. The total length of the ciency (1921); H. W. Heinrich, Industrial I. is nearly 2000 m., its minimum width Accident Prevention (1931); Annual Resolvention to the Chief Inspection of Factories for The Indus Delta Country, 1894. See also 1947. Cmd. 7621. H.M.S.O. 1949.

Industrial Court, permanent court set up as a result of the Whitley Committee of 1918 in which disputes between workmen and employers can be investigated and referred for arbitration or other solution in the event of no mutual agreement.

Industry. It is financed by the Brit. Gov. The word design is taken to cover the many processes in the planning of goods for hand production or, more usually, for quantity production by machine and to include structure, texture,

Factories	Docks and Warehouses	Building Operations	Works of Engineering Construction	TOTA	
	-	1			
716	105	1 1 1 2		1.003	

L per cent of 1937 1937 3 (100 1912 991 1,363 839 136 218 84 1947 516

Number of Non-batal Accidents

Number of Fatal Accidents

Year	Factories	Docks and Warehouses	Building Operations	Works of Engineering Construction	TOTAL	Total per cent of 1937
1937 1912 1947	176,013 295,613 185,231	8,303 8,308 7,819	8,223 7,758 8,251	1,558 1,096	192,539 313,267 202,J97	100 163 105

Typical figures of direct causes of acci- | dents in Brit. factories are as follows (percentage of total accidents for 19471: power-driven machinery, 16-7; molten metal or other hot or corrosive substances. metal or other not or corrosive substances.
4.4; hand tools, 9.9; struck by falling body, 8.8; persons falling 12.0; stepping on or striking against objects, 7.0; handing goods, 29.2; other causes 12.0.
These figures show that what are known as non-machinery accidents accounted for 83 3 of the total.

An important statutory reform in the law of Compensation for I. A. was intro-duced in 1946 when on July 26 the royal assent was given to the National Insur-ance (Industrial Injuries) Bill, framed by the Churchill Gov. to place compensation for industrial accidents on the basis of a contributory social service. Under this Act the basic rate for injury benefit for 100 per cent disablement is 45s, with the right to claim an addition of 25 per cent to his modical assessment if the worker can show that by reason of his injury he is no longer able to fill his previous occupation or be retrained to fill an occupation of an

equivalent standard.

Consult' The Human Factor and Industrial Accidents' (International Labour Iterator, 1926); Industrial Falique and Effi-

taken as meaning both practical convenicace and beauty. The main functions of the council are to help industries to set up design centres which operate on a cooperative basis, supported by contributions from the firms in each industry, with the addition of a grant from the Ex-chequer, to hold and take port in exhibi-tions, to publicise good design both independently and in collaboration with those adult education and voluntary associations which are concerned with design appreciation; to co-operate with calication authorities and others in the training of industrial designers; to advise Lov. depts, on the design of goods which they purchase; and to be a centre of advice and information on all matters of advice and information on an matters or industrial design for industry, gov. depts., and other interested bodies. The in-dustrial div. of the council offers manu-ica theres, designers, and interested bodies a general advisory service or the promotion of improved industrial design: the information divinctudes rections which offer specific services to educational hodies of every kind, to industry, and to the public. The others are at Tilbury House, Petty France, London, S.W. 1. Industrial Diamonds, see under Dia-

Industrial Diseases, see Industrial knowledge and belief has been properly Welfare and Occupational Diseases. Industrial Hygiene, see under Hygiene, and Industrial Mygiene, see under Hygiene, and Industrial Insurance. In its beginning

Industrial Insurance. In its beginning I. I. consisted of 'burial societies' through which the working classes, by payment of small weekly sums to a mutual society, received sufficient money to defray funeral expenses when the need arose. From these comparatively obscure societies the great business of I. I. of today devoloped. A demand for whole-life insurance followed the modest requirements of burial funds, and this demand was satisfied by the innovation of premiums which could be paid weekly or monthly and the issuing of policies for smaller assured sums. These premiums are collected at the houses of the policy-holders, and it is this 'collection,' coupled with the weekly or monthly payments, which distinguishes I. I. from ordinary insurance, where promiums are usually paid annually for larger assured sums. The otheral limit which marks insurance as industrial is that the premiums must be collected at intervals of less than two months, while the sum assured must be less than £1000. This demarcation was embodied in the Act of 1923. Associated with the I. I. companies are the Friendly Societies: the adminiss are the Friendly Societies: the authinistration of both is governed by the statutory measures of the same Act, and the Industrial Assurance and Friendly Societies Act, 1948. All such companies must be registered and pay a substantial deposit to the Chief Hegistrar, who has authority to hear and judge disputes arising out of claims, criticise balance-sheets, hold inspections, reject unsound valuations, and even direct the winding Industrial Assurance Act of 1923 was further extended by the I I, and Friendly Societies Act of 1929 which is concerned that the companion of the I I and I was a support of the I I and I was a support of the I I and I was a support of the I I and I was a support of the I I and I was a support of I with the computation of the minimum sum payable at death under the age of ten, and (2) the validation of the life of an-other endowment invarance. But important amendments of the law were made by the Act of 1948. This Act Geetion 6) contains a prohibition of insuring money to be paid on the death of a child under ten or, in other words, it prohibits insuring so as to render any sum payable under the insurance on the death of any person at any time before he or she attains the arc of ten years (otherwise than by repayment of the whole or any part of premiums paid) of the whole or may part of premiums paid). This prohibition also applies to registered or unregistered friendly societies or trade unions. Hy section 2 power is given to insure the life of a parent or grandparent for not more than £20, but only in respect of a person who at the time of the proposal is ordinarily resident in Great Britain; and the Act prohibits alienation of such insurances. The former power conferred on I. I. companies (and friendly societies) to insurance for funeral econerred on 1.1. companies (and Friendly Societies) to insure money for funeral expenses is also abrogated by the Act; while, by another provision, liability on policies will not be restricted on grounds of health of the person upon whose life the assurance is taken out, if the proposers

Like many other Brit. institutions, in-dustria. life insurance has completely changed its purpose during its existence, besides being radically reformed. It began, as implied above, in the desire of every working-man to guard himself and his family against the danger of a pauper's grave. It was to permit the inclusion of the family that Parliament allowed in this sphere alone the insurance of the life of another-an exception to the general and salutary rule that no one might insure and singly rate that no one night risings on as to benefit financially from another's death. With the payment under the National Insurance Act, 1916, of death benefit as from July 1, 1949, the whole original cause of 1. I. comes to an end. Some thought that on the principle of cessante ratione cessat lex the institution of I. I. should be ended. But its potentiali-ties for good in the future should guarantee its continuance, especially as the worst abuse has been removed by the Act of 1948. I. I. to-day has been transformed into a flexible system which enables the wage-erner (already compulsorily insured so as to guarantee him a minimum standard of living in all the changes and chances of life and a decent funeral when he dies) to assure for himself and his family all those infinitely various benefits at various monetary levels which he desires and for which he is willing to pay. The main remaining criticisms of f. The main femalining criticisms of 1. 1. to-day are its relatively high cost and the number of forteitures. No fewer than 910,000 policies were forfeited in 1918, but this was a great improvement on 2,610,000 in 1938 and 3,160,000 in 1929. It may be added that the size and importance of 1. 1. are shown by the fact that the institution draws appually mass that the institution draws annually more than £110,000,000 from the pockets of wage-carners.

As administrator of the Industrial Assurance Act of 1923, the Chief Registrar of Friendly Societies is styled the Industrial Assurance commissioner (Offices: 17 North Audley Street, London, W.). See Ann. Reports of the Industrial

Commissioner.

In the U.S.A. and Canada a similar system of I. I. operates. In the former country the administration is directed by the Gov. of the separate states, and not by the Federal Gov., while in the latter con-trol is vested in the Dominion Gov. under the provisions of the Dominion Insurance

Act of 1927.

and Industrial Provident Societies which can be registered under the Industrial and Provident Societies Acts of 1893-1928 are those formed to carry on any industry, business, or wholesale or retail trade authorised by the rules, in-cluding dealings in land. To a certain extent the rules of registration and general statutory regulation of these societies are assimiliated to those of friendly societies (see under FRIENDLY SOCIETIES). Modern I. and P. S. are divisible into co-operative and building societies. (See also BUILD-ING SOCIETIES). The primary character-istics of an I. and P. S. are indicated by the description: 'Industrial' connotes the making of a profit by the mutual personal exertions of the members, while 'provi-dent' emphasises the providing for the future of the members by the distribution of the profits. The history of I, and P. S. shows that it was long before they gained public confidence, or even met with legal recognition. According to Brabrook, they were viewed with mistrust because they became assocated with ever wider schemes enanciated by promoters who probably looked upon them as socialistic organisations. Robert Owen's projects were especially illustrative of this idea. The first legal recognition of co-operatives societies was in the Friendly Societies Act of 1846. The basis of the law of I, and P. S. is now to be found in the Consolidated Industrial and Provident Societies Act, 1893. No member of an L and P. S., other than a registered society, may hold more than £200 in shares. The society must make an annual return of its receipts and exponditure, funds and effects to the Registrar of Friendly Societies. On the application of one-tenth of the members or of 100 where the membership is 1000 or more, the register may appoint an inspector to investigate the affairs of the society. The Prevention of Fraud (Investments) Act of 1939 requires some societies of the investment trust and property type to transfer their registration under the Industrial and Provident Societies Acts to registration under the Companies Act, 1929, and in consequence they must conform to the prospectus provisions of the latter Act; but they are free of the normal companies' registration fees and stamp duties on paid-up share capital. From the passing of the Act of 1929 registration under the Industrial and Provident Societies' Acts was restricted to bona inde 'co-operative 'organisations, including societies' conducted mainly for the purpose of improving the conditions of living, or of otherwise promoting the social well-being, of members of the working classes '--the principle which underlay ing classes—the principle which underlay the old I, and P. Acts although not ex-pressly enacted Before the Second World War there were 5693 registered societies, with a total membership of 9,283,600 and funds of £281,507,000. See under CO-OPERATION.

Industrial Psychology, branch of psychology which investigates the effects, mental and physical, produced by their occupation on workers in the various industries. directed to the climination of causes which lessen industrial efficiency. Among matters which come under review are the duration of working periods, pauses for rost, environment, monotony, meal times, fatigue, lighting, heating, and ventilation. A section deals with vocational tests de-A section deals with vocational tests designed to aid the selection of workers for particular trades or tasks. There is a chair of National Institute of Industrial Psychology which specialises in the study of vocational itiness (Aldwych House, Aldwych, London). There are also a chair of Industrial Medical Psychology in Lion through smalls on undustrial amelioration Univ. and a Group for Research is Industrial Psychology, one of many

units in the Medical Research Council. With the great increase in the use of machines and large-scale production methods, particularly in the textile industry, it becomes of great importance that materials and methods of work and transmit general working conditions should be designed specifically in view of what the greatest possible number of normal people could do with the least strain, fature and threat of ill-health. Machines and working conditions should be designed in the light of a sound knowledge of what the normal human senses, muscles and mind were fashioned and developed to do easily and well.

Industrial

(Britain). Relations Britam, unlike the position in many foreign countries, the relations between em-ployers' and workers' organisations have been developed on a voluntary basis over many years. Collective bargaining be-tween employers and workpeople has for many years been recognised in Britain as the method best adapted to the needs of industry and to the demands of the national character in the settlement of wages and conditions of employment. It has produced a well-co-ordinated system of conventional working arrangements affecting in the aggregate large numbers of work people and defining, generally with great precision, almost every aspect of I. R.

Historical and legislative development of organisations of employers and workpeople. -Organisation of employers and workers grew with the development of modern industry from the eighteenth century. the sixteenth century the State regulated wages and conditions, and at the same workers and of employers from altering wages and conditions of work. But with the mereasing complexity of industry and the div. of labour and wages this State system of regulation fell into disuse, and conditions in the laisser faire economy of the day, were left to be fixed by employers. During the eighteenth century, further aws were passed prohibiting combinations in various trades and, as the result of the report of a parl, committee or inquiry, the Combination Laws Repeal Act, 1824, was passed. This legalised trade societies and the immunity thus granted to combinations for the regulation of wages and conditions led to the widespread forma-tion of unions. This led to disputes and strikes and to agitation for the repeal of the Act of 1824. An amending Act in 1825 limited the actuities of the trade societies, making it difficult for them to take effective action without infringing the law; but the Act legalised the right to withhold labour by collective action, and this fundamental right has never been abrogated despite many changes in the powers permitted to Prade Unions. The

wages and conditions of work. Strikes were frequent from 1825 to 1871. A Royal Commission of 1867 reviewed the position of Trade Unionism, and consequent on their recommendations two important Acts were passed in 1871—the Trade Union Act and the Criminal Law Amendment Act. The Trade Union Act of 1871 is the prin. Act on which the present day status of unions is founded. The Criminal Law Amendment Act qualified the freedom conferred under the Trade Union Act by providing penalties for violence, intimidation, molestation, and obstruction of any person in order to coerce him for trade purposes. Since then there have been many subsequent Acts, supported by been many subsequent Acts, supported by a great body of case law, and the law has been codified. These measures and judg-ments include the Conspiracy and Protec-tion of Property Act, 1873 (see Con-spiracy); the Employers and Workmen Act, 1875, dealing with disputes between employers and workmen arising out of breaches of contract and allowing courts to adjust claims for wages or damages; to adjust claims for wages or damages; the Trade Union Amendment Act. 1876, amending the definition of Trade Unions given in the Act of 1871: the Taff Vale Judgment of 1901 and the consequent Trade Disputes Act. 1906 (see under Trane Unions): the Osborne Case, 1909, and the Trade Union (Amalgamation) Act. 1917 (modified by the Scoleties (Miscellancous Frovisions) Act. 1940); and the Trade Disputes and Trade Unions Act., 1927 (see Trade Unions). A period of trade depression followed the year 1875 of trade depression followed the year 1875 and lasted for two decades during which trade unionism lost some of its strength. Strikes were common and nearly always unsuccessful. The unions confined themunsuccessful. The unions commen them-selves mainly to establishing such rela-tions with employers as would ensure the maximum benefit in wages and conditions to the workers. When this phase passed a new unionism arose with a tendency towards a more active industrial policy and a reversion to the earlier idea of one big Union. But the statutory position of the Trade Unions was unchanged throughout this period, though the historic judgments above mentioned resulted in the further legislation indicated. Since 1868 trade union movement has been centralised in the Trade Union Congress, the objects of which are 'to promote the interests of all its atiliated organisations and generally to improve the economic and social conditions of the workers.' Although the origin and main activities of Trade Unions lie in the industrial field, they have also a direct association with politics because of the connection between the Trade Union Congress and the political Labour Party. A joint body, the National Council of Labour, which is composed of representatives of the General Council of the T.U.C., of the Labour Party, of the Parl. Labour Party, and of the Co-operative Union is responsible for the consideration of ques-

Strikes companies (see COMPANIES, CITY) have 371. A been in existence in Britain since the ved the Middle Ages. These bodies which once dealt in some measure with both trading and labour questions affecting their craft differed materially from employers' organisations under present-day conditions. These employers organisations, like These employers organisations, like most other brit. institutions, have developed to meet particular circumstances and do not conform with any uniform plan. Employers organisations full into three groups: the groups the groups of the conformation fall into three groups: those constituted for dealing with I. R. questions, including collective bargaining with Trade Unions and the avoidance of disputes ; which fulfil that purpose and, in addition, deal with trading questions; and those which deal only with trading questions and which are therefore irrelevant to this article. As regards the first two groups, the repeal of the Combination Laws and the development of Trade Unionism in the nineteenth century stimulated both an increase in the number of these employers' organisa-tions and the expansion of their activities. The extent of the industrial field they cover is estimated at about eight million workers. Some of these organisations are local in character and deal only with a section of an industry; others are national in scope and deal with the whole field of a particular industry; while in many of the chief industries there are local or regional organisations combined into national federations, but the degree of authority exercised by regional organisations over individual members, or by federations over athliated organisations, varies con-iderably. Just before the Second World War there were about 270 national federations concerned with matters relating to the employment of labour and in addition about 1.50 other employers' organisations consisting mostly of local or regional branches of the national federations (an analysis of these 1820 organisations classifield according to industrial groupings will be found in the Abstract of Labour Statis-tics of the United Kingdom (1922-36)). The corresponding total at the end of 1943 was approximately 1900, with the same ratio of local to national bodies. By 1919 there had been formed the National Con-federation of Employers' Organisations (now called the Brit. Employers' Con-federation) to secure the co-operation of the national federations in dealing with all questions arising out of the relations between employers and their workpeople. This Confederation, consisting of federa-tions employing about 70 per cent of the total industrial population of Britain, is the employers' counterpart of the T.U.C. for dealing with labour questions affecting industry generally. In that capacity the Confederation has represented Brit. employers at the annual conferences of the International Labour Organisation since 1919. This Confederation and the T.U.C. have long been recognised as the authoritative channels of consultation between tions which have both an industrial and a gov depts, and organised employers and political implication.

Employers' organisations in the form of merchant guilds (see Guilds) and livery the Second World War the need for the closest co-operation was at once recognised. Accordingly there was estab. in Oct. 1939, a National Joint Advisory Council of fifteen representatives nominated by each organisation. It was agreed that the scope of the Councu's functions was to include all 'matters in which employers and workers have a common interest, while, at the same time it was not to encouch on the prisidiction of organisations concerned with particular industries. In May, 1940, the Council appointed a joint Consultative Committee appointed a Joint Committee consisting of seven representatives of the Brit. Employers' Confederation and the T.U.C. respectively to advise the Minister of Labour and National Service on all matters arising in the period of emergency.

Collective Bargaining and Development of Joint Negotiation between Organisations of Employers and Horkpeople.—In the early days of Trade Unionism the outlook of the Unions reflected both industrial aspirations and political ideas; but by about 1850 they were concentrating much more on the improvement of working conditions. The next stage was the estab. ditions. The next stage was the estable of some agreed relationship with employers' and employers' organisations. Conciliation Bonius, with a form of procedure confined to the treatment of disputes, were set up in many industries; but with the development of industry the scope of this arrangement was widened and by 1900 a pumber of the study indusand, by 1900, a number of the staple indus-tries had adopted the practice of collective bargaining. The term 'collective bar-gaining' is applied to those arrangements gaining is applied to those arrangements under which the wages and conditions of employment are rettled by a hargain in the form of an agreement between em-ployers or associations of employers and workpeoples' organisations; but in un-organised trades the individual workman accepts or refuses the terms offered by the employer without reference to any one class interests than his own. For many years collective agreements have played a most important part in the regulation of working conditions in Britain, embracing a great variety of matters including not only wage rates but also hours of work, piece work arrangements, holidays, etc. The terms and conditions laid down in the agreement are applied not only to members of trade unions but also to non-unionists. Trade agreements are also largely ob-served by employers who are not party to them. This system of collective bargaining includes also agreements regarding the procedure for settling questions as they ariso, and in no other country has so much been achieved towards evolving machinery for the avoldance of strikes and lock-outs. The whole of this collective system rests on the principle of mutual consent. on the principle of inutual consent. This acceptance is purely voluntary depending solely on the sense of moral obligation.

Loyal acceptance has in fact been the rule in all the trades concerned. Certain stops have, however, been taken in the interests of the community to encourage joint voluntary machinery where such does not exist and to assist where necessary in the settlement of disputes. There are two voluntary machinery where such does not laying down that it suitable collective exist and to assist where necessary in the settlement of disputes. There are two main legislative measures, the Conciliation settlement and that the settlement

Act, 1896, which was passed as a result of the recommendations of a Royal Commission of 1891; and the Industrial Courts Act, 1919. In addition, however, much has been done through the conciliation officers of the Min-try of Labour to strengthen and support existing joint to strengthen and support existing joint. machinery and to promote new voluntary machinery as organisation developed in industry (for details see under Arbitra-rios, Concillation in Industry). The first modification of the voluntary prin-ciple was made by the Trade Hoards Act 1909, which set up Trade Boards cm-powered to fix minimum wage rates. This Act was confined to certain unorganised trades where 'sweated' conditions ob-tained, but the Act was extended in operathat year. Again, during the First World War, the Munitions of War Act. 1915, made strikes and lock-outs illegal so far as munitions work was concerned, unless the dispute had been referred to the Round of Ward which dest south the Board of Trade which dopt, could, in general, enforce arbitration, though it was supplementary to the agreements in various industries. Cenerally speaking, however, as the war progressed, arbitration became the practice, and this war-time national arbitration gave encouragement to the regulation of wages on a national basis during and after the war. But deswite the legal prohibition of stoppages of work and the acceptance of compulsory arbitration, there developed industrial intest throughout the country which seems to have had its origin in the shop stewards' moreometrial. movement and the origin in the shop stewards movement and the theory of industrial unionism, notably on the Clyde and in Shetheld. The essence of this theory was devolution of authority to the workshop and the estab. of workers' control therein on militant lines with the ultimate object of securing control of industry generally. As a result of the recommendations of the Whitley Committee's Report there was an extension of the trade board system and the development of statutory machinery for the prevention and settlement of industrial disputes. The Committee laid down as an over-riding consideration 'the advisability of a continuance, as far as possible, of the present system whereby industries make their own agreements and this is still the deciding factor of State pole; in regard to intervention in industrial disputes (see Whillerism or Whitlerism (Councils).

During the Second World War the emphasis on the voluntary principle was maintained as far is possible in the conditions of Employment and National Arbitration Order, 1940. This Order prohibited strikes or lock-outs unless the dispute had been reported to the Ministry of Labour and had not been referred by him for settleteent, and it also provided for the estab. of a National Arbitration Tribunal for dealing with disputes while should have the legal force of an arbitration award.

The voluntary joint machinery for the regulation of terms and conditions of employment has evolved according to the different trades and industries, but the better the industrial organisation the more effective and simple is the machinery of collective bargaining. In the early days of collective bargaining negotiation was generally confined to localities, but in most industries the scope of the machinery has been continually extended until national negotiations have largely replaced local interchanges on industrial questions. National negotiating machinery however varies considerably in form and in degree of authority over the local machinery and, moreover, the trend towards national negotiation does not mean that a national uniformity has been estab, in regard to wage rates and conditions. Variety in the methods of collective bargaining as well as in wages structure is most to be found in industries where the principle of joint negotiation between organisations was well estab. before 1918. There is greater uniformity in industries where joint orgamsation is a more recent development and has been founded on the basis of the Joint Industrial Councils recommended by the Whitle, Committee. Consult Industrial Relations Handbook, H.M.S.O., 1914, and A. Beacham, Economics of Industrial Organisation, 1914. Industrial Revolution in Great Britain,

the compendious description given to the changes brought about in social structure by the inventions of the eighteenth century. In the later part of the seventeenth century Eng. industry had benefited by the immigration of foreign artisans, and many branches of cloth-making were hany branches of clott-making veri-learned from alien, like the Walloons, and slik-weaving from the Huguenots, who ame over in 1655 after the Revocation of the Edict of Nantes. Paper-making, glass-making, mechanical toy-making, and the manuf. of clocks and watches were also among the activities estab. through aliens from the Continent. But the remarkable development of industry, due to the invention of unchinery in the eightcenth century and to the exploitation of the coal mines, dwarfed the preceding progress into insignificance and resulted in a rapid and vast increase of the population and, medentally, led to all the implications of the terrors snown as larsec-faire.

Piner to the era of machinery, weaving had been a cottage industry, while yarn spinning was a spare-time industry practised all over the land by women and girls at home. Then in 1738 came the inventors tion by Kay of Bury of the flying shuttle, which obtaited the old and slow process of carrying the west through the threads of the warp, and so enabled the weaver to double his output, and, in turn, led spin-ners to seek mechanical aids to meet the increased demand for yarn supplies.

'mule,' a combination of Hargreaves jenny and Arkwright's water-frame—all of which inventions were at first applied to cotton-spinning only (see Cotton-SFIN-NING AND MANUFACTURE). Twenty-five years later came Cartwright's power loom in its perfected form, and by that year his Doncaster factory was equipped with a steam-engine, and a year or two after that hundreds of his looms were also selling to Manchester firms, while gradually the power loom was applied not only to the cotton, but also to the woollen industry. The next stride was the general super-session of water-power by steam, a change which came with the utilisation of the coal resource of the country, when James Watt patented his 'Watt' steam-engine. the revolutionary principle of which was the obviation of waste of power by the device of the separate condenser. Watt's various patents were taken out in 1781-85. by which time the change from water-power to steam made rapid progress, and mills and factories were set up near the coalfields, where fuel was cheaper. Later the iron-masters began to investigate the use of coal as a smelting fuel, and with improved methods the output from their furnaces increased by leaps and bounds.

All these inventions led to the climination of the cottage or private worker and to the rapid growth of factories, and with them of the manufacturing ths. of the N. of England. Pop. shifted and concentrated about the conflicted, so that places remote from the fields declined in pros-perity, and from that time agriculture as a national industry suffered permanently. There were necessarily strikes and disorders as the result of these changes, but they were more incidents in the general progress. Pop. increased by nearly 20 per cent in the first half of the century, and Brit, trade and wealth were augmented beyond measure, e.g. exports rose five-told from 1720 to the end of the century. fold from 1720 to the end of the contary, Set J. L. and Beatrice Hammond, The Rise of Modern Industry, 1925; L. White and L. Shanahan, The Industrial Revolution and the Leonomic World of Today, 1932; H. Hamilton, The Industrial Revolution in Scotland, 1932; A. Dodd, The Ladistical Revolution in North B ales, 1953; T. S. Ashton, The Industrial Revolution, 1760, 1840, 1935. 1953; T. S. Ashton, 7 Recolution, 1760 1830, 1948.

Industrial Schools, see REFORMATORY ACT-

Industrial Welfare. Since the First World War the question of I. W. has been increasingly important. It is concerned with the examination of the working and living conditions of industrial workers with the object of removing unnecessary hardships and providing unnecessary hardships and providing amenities to mitgate the irksome nature of their work. There are many aspects to be reviewed in such service, including the study of health in industry, and the proper selection of workers for aultable employment. These depts, of I. W. concern the funding of the factory. Outside next important inventions were the spin-ning jenny of James Hargreaves in 1764, such questions as housing, travelling, the the invention of the water-frame spinning visiting of the sick, recreation, stc., are roller of Richard Arkwright, Crompton's dealt with. In a number of irrms, elaborate education schemes have been instisocial education so as to create better opportunities for advancement

The modern movement may be said to have begun as a result of the impeturgiven to questions of health and welfare by the committees act up by the minuters of munitions in 1916 to sufguard the health of munition workers Robert R Hyde, who with Scebohm Rowntres wis in charge of this work subsequently, in 1915, founded the I W society. In its early days much of the work of the to coul miners, and the increasing protein of pit head biths was one of the pits of responsibility as foreign, a per-

professional organisation of personnel managers. While I W is still greatly concerned with health, amenities recrea tion and the like, more recent developments which are likely to continue, have been in the direction of estal lishing joint consultation machinery t tween manage ment and worker and making in effort to see that it works efficiently Works councils, set up to promote co operation between workers and management usu ally include in their functions the idmin sche as Another subject with changes con it i the attention is the letter and



Cal uny Bros, Ltd

AMENITIES FOR THE WORKER A DINNERHOUR SCENE ON ONE OF THE WORKS RECREATION GROUNDS II BOURNVILLE

results Subsequently the work in this TNNS and so on industry was taken over by the Minrs | 10 munds to exten Wellare Committee. The connection be | with is recognised. tween the I W movement and most of the nationalised industries, however, con tinues to by close The emphasis of the work has changed with the years, since many of the provisions for which the I W Society contended in its carly day, as, e.g., holidays with pay, have now been generally accepted in principle, and in many cases either within the national agreements or even incorporated in logis lation Moreover all firms of any size have now their own personnel departments

Attempts have also It n m wie to extend the principle of I W , with his recognised by all the larger firms to the very many small ones, which in the u Lu gate represent su na large proport on of industrial worker- and where welf me provisions are not gratty developed

Both in Britain and in the U - 4 (where I W istermed Industrial Hygiene), vaminations are conflicted on the problems of injury by dust and poisons an i of ventilation an lighting The medical service attacks such mestions as periodi cal examination of w there, the estadental and eve clime, rost-houses for fatigued workers, while sanatoria and with personnel officers trained to handle fatigued workers, while sanatoria and the human problems of industry. The private hospitals are maintained in many fractitute of Personnel Management is the industries. Research is conducted with assiduity and success, and that the movement is justified is proved by the fact that in both countries the days of labour lost by illness have considerably reduced. Modern methods in factory building and layout have of course much influence on the provision of amenities. See also MENTAL TESTS. See Annual Report of H.M. Chief Inspector of Factories; pubs. and jours. of Industrial Welfare Society and the British Indentured Institute of Management; and Cadbury Bros. Ltd., Record, 1919–1939; 1930; and E. Mayo, The Social Problems of an Industrial Civilisation, 1949.

Industrial Workers of the World, organisation of revolutionary labour unions formed and operating chiefly in America. It was founded in 1905 at Chicago, and was the outcome of a meeting of Socialist and trade union leaders. The most prominent of its leaders were E. V. Debs, W. Haywood, W. Trautman and the Rev. T. J. Hagerty. The activities of the I. W. Were generally characterised by extreme violence, and in many states a campaign of attempted suppression was taunched against them, ending in the deaths of Joe Hill in Utah, and Little in Butte.

After the First World War communism absorbed many of the I. W. W. supporters, and organised opposition from the various states caused a further decline. Special laws were passed rendering such forms of



INDUS VALLEY CULTURE:
A stone statuette from Mobenio-Daro

syndicalism illegal, and in 1918 more than a hundred leaders were imprisoned after a trial in Chicago. Moreover, the restrictions imposed by later immigration laws reduced still further a membership hitherto largely maintained or augmented by the

imporation of unskilled labourers. Great Britain minor branches have been formed at London, Liverpool and Glasgow. Indus Valley Culture, term by which is known the anct. civilisation of the Indus valley. Excavations carried out in 1922 at Mohenjo-Daro, a large mound 25 m. S. of Larkana in Sind, revealed the site of an anct. city which had existed some five thousand years before. It appears to have been successively destroyed and rebuilt seven times over a period of perhaps a thousand years from 3500 to 2500 B.C. Other evidences of the civilisation of this time have been thought the appears in the second of the civilisation of the second of the civilisation of the second of th Other evidences of the civilisation or this time have been found at Harappa in the Montgomery dist. of the Punjab. Those two sites, 100 m. apart, and others which have been discovered show that the civilisation was widely spread along the Indus valley. The ruins of the city of Mohenjo-Daro show a more advanced to the civilisation than artified in India state of civilisation than existed in India in much later times. It had affinities with the anct. civilisations of Sumer and Mesopotamia, but although there was undoubtedly communication between them it is not known whether they were independent or whether one was the offshoot of the other. The racial origin of the Indus people cannot be determined with certainty. They lived in well-built brick houses of more than one storey, equipped with baths and drains. They were an artistic people, skilled in pottery, carring, and metal work, using copper, bronze, and silver. Iron was unknown. A number of seals beautifully carved on steatite give representations of various animals, including the buffalo, elephant, sheep, and cainel. These animals were probably domesticated. Herses and cows do not domesticated. Horses and cows do not seem to have been known. No remains of a building have been identified as a temple. Religion seems to have control on the cult of the Mother-Goddess, also of a male god from which the Hindu Siva may have derived some of his attributes. The causes which led to the downfall of the civilisation and the extinction of its cities can only be surmised. It is probcities can only be surmised. It is probable that the prosperous cities were over-run by a foreign invader and the people massacred. See Sir J. Marshall, Mohenpo-laro and the Indus Civilization, 1931; L. E. Mackey, The Indus Civilization, 1935.

Indy, Paul Marie Théodore Vincent d' (1811-1931) Fr. composer, b. at Paris. Member of a noble family of the Ardèche dist. In the Vivarais. His mother died at his birth and he was brought up by his paternal grandmother, a good musician. At the age of eleven he was sent to Diémer for the panoforte and Lavignac for theory, and later studied planoforte under Marmontel. In 1870 he pub, his first composition and served in the defence of Paris against the Frussian army. To please his family he studied law, but was determined to be a musician and went for advice to Franck, who offered to teach him. He also joined Colonne's orchestra as drummer to gain experience. Pasdeloup gave the first performance of one of his works, the overture to Schiller's Puccolomini, afterwards part of his Waltenstein trilogy.

Next to Franck he admired Liszt, with Next to France he admired light, whom he spent sev. months at Weimar in 1873, and Wagner, whose first Ring cycle he attended at Bayrouth in 1876. In 1894 he joined Charles Bordes, together with Gullmant, in founding the Schola Cantagura, the taught them with bla dath torum: he taught there until his death and had many pupils of the highest distinction. From 1912 he also directed the orchestral class at the Conservatoire

His works include sev. operas (including His works include sev. operas (including Ferraul), theatre music, symphonies, chamber see studies by A. Sorieyx, 1914, and I. Valias, 1916; and A. Gabeaud, Auprès du Maitre V. d' Indy, 1938.

Inaboli, scaport of Asiatic Turkev, on the Black Sea, about 70 m. S.W. by W. of Sinope. It possesses a roadstead, and exports wool, mobilir, etc. Pop. 48,000.

Inabriates and inabriates Acts. The term inabriate is generally used to denote

term inebriate is generally used to denote an habitual drunkard. Clinically, drunkenness (q.v.) is no more than a temporary cerebro-spinal disorder induced by the absorption of much alcoholic drink in a short space of time. It varies in form according to such circumstances as the amount of alcohol taken, the state of the stomach, the climatic condition, and the reactions of the individual, and in its psychical effect on the individual there may be many degrees of perversion of the senses, vertigo, and confusion of the intellect. But when and confusion of the intellect. long persisted in, it may result in a diseased condition of the nervous system popularly termed inebriety. The symptoms are a craving for alcohol or an irresistible obsession and impulse to drink (dipsomania). which may be either chronic or periodical mental disorder of a depressive nature characterised by an undefined sadness, uneasiness, and apathy. The only chance of cure is to protect the subject against himself by enforcing total abstinence and by suitable treatment with alkaline bro-mides or other sodatives, or by psychia-tric treatment to resolve the inner conflict which is driving the person to drink. It is now generally recognised that drunkonness is invariably a symptom of anxiety; if the cause can be discovered the symptom will disappear. The In-obriates Acts allow of two classes of institutions: State and certified inebriate reformatories, and hecused retreats. A list of retreats for inebricty will be found in Burdett's Hospitals and Charities (1930). where it is pointed out that any list of Inebriate Homes must necessarily be incomplete: only a few are licensed under the Inchriates Acts, and the majority of unlicensed homes are essentially of a private character with very few patients.

Inebriates Acls. - The object of these

Acts is to make provision for the compulsory detention and special treatment of criminal babitual drunkards in state or certified inchriate reformatories, and provide for the voluntary detention of non-criminal 'habitual drunkards' lu licensed In connection with the Inebriates Acts it may be noted that by the English law drunkenness is no excuse for crime, though where intention is of the es-

an extenuating circumstance; but drunk-enness so far persisted in as to produce delirium tremens, or any other species of alcoholic insanity, renders a person in-capable of committing crime in the eye of the law, though he may be confined as a criminal lunatic. (See further under

CRIMINAL LAW: DRUNKENNESS).
The Habitual Drunkards Act, 1879, enables a co. or bor. council to grant to any person or persons jointly a licence to keep a retreat. One, at least, of the persons to a retreat. One, at least, of the persons to whom a licence is granted must reside in the retreat and be responsible for its management, and the medical attendant of the retreat must be a duly qualified medical man. 'Habitual drunkard' (a term now changed in the later Acts to 'inebriate') in this Act is defined as a person who, not being amenable to any jurisdiction in lun-act, is, notwithstanding, by reason of habitual intemperate drinking of intoxicants, at times dangerous to himself or herself, or to others, or incapable of man-aging himself or herself, and his or her affairs. The Inchriates Act, 1898, which initiated the estab. of these reformatories. gives power to the court, where a person is convicted on indictment for an offence punishable with imprisonment or penal servitude, and who committed the crime while under the influence of drink, to order him to be detained in a state or certified incbriate reformatory provided: (1) The jury find, or the prisoner admits, that he is an habitual drunkard, and (2) the man-ager of the reformatory are willing to re-ceive him. The committal may be either in addition to or in substitution for any other sentence.

Inequality, term in astronomy. sake of convenience the average motion of a heavenly body (supposed to be made in a circle which has the average distance of that body from its primary for its radius) is the first object of calculation when the place of the body at some future time is to be predicted. All the alterations which are rendered necessary by the megnal motion of the planet are called inequalities.

Inert Gases, see RARE GASS. Inertia. Newton's first law, ' That every body perseveres in its state of remaining at rest, or of moving uniformly " a straight line, ercept in so far as et is compelled by impressed forces to chan je its slate, is sometimes called the law of inertia. It has always been easy to understand that force is required to set a body at rest in motion, and the property of I. was recognised from this standpoint by the aucts. It was not until the time of Gables, however, that it was recognised that the same property held true of bodies in motion, and that it was understood that were it not for external causes, a holy in motion would never of itself come to rest. The Moment of Inertia is found by summating the products of every particle of a mass into the square of its distance from a given point or axis of rotation, or expressed as a formula $I = \Sigma(mr^4)$. See Moments.

Inez de Casiro, see Custro, INLZ DE. Intallibility, freedom from all error in the teaching of faith and morals claimed sence of the offence, it may well amount to by the Rom. Catholic Church. The ques-

tion of the I. of the Church has been a sub- necessary consent, and the consent reject of dispute for many centuries, the journed is that of the father if living, and if ject of dispute for many centuries, the dispute centring not in the question as to whether or no the Church is infallible, but in the question as to how and where its infallable utterances were made. The view of the L. of the Church held by the E Or thodox churches is retrospective, their teaching being that all the acts of the councils received in the E. as recumenical are infallible. In the W., the question has been one between the Gallican and has been one between the Gallican and Ultraniontane parties (see Gallicanian), and the latest decision of the Roin Church on the subject was made at the Vatican Council of 1870. This council teaches 'That when the Roin Pontiff speaks excathedra, that is, when he, using his office as pastor and teacher of all Christians, in virtue of his Amstolic office, delines a decirious and the council of the Amstolic office, delines a decirious and the council of the Amstolic office, delines a decirious and the council of the Amstolic office, delines a decirious council of the Amstolic office, delines and the council of the Amstolic office delines and the council of the Amstolic office delines are considered to the council of the co virtue of his Apostolic office, defines a doctrine of faith and morals to be held by the whole Church, he, by the divine assistance promised to him in the person of blessed Peter, possesses that infallibility with which the Divine Redcenier was pleased to invest His Church in the demnition of doctrine on fath or morals, and that, therefore, such definitions of the Rom. Pontiff are irreformable in their own nature and not because of the consent of the Church. No authoritative decision has yet been made, however, to say exactly when the pope 14 speaking ac calhedra, and it is disputed among Rom Catholics as to whether certain utterances are to be regarded as infallible or not is quite agreed, however, that the I does not extend to pronouncements on selen tific and similar matters

Infamy, not now a term of art in Eng. law, but formerly used to denote the loss of status consequent on conviction for an offence involving dishonesty or inhumanoffence involving dishonesty or inhumanity, which loss entailed disqualification as a witness or juror. The prin crimes which involved I were treason, felony, all offences based upon fraud, piracy, sub-ornation of perjury, and common law cheating. But neither past nor present moral heinousness now disqualifies anyone as a witness, thou he the evidence of such a person may well be discredited by a new condensation for the evidence of such a person may well be discredited by a new condensation for the evidence of such a person may well be discredited by a jury, and conviction for our ne does not dis qualify as a juror unices of course, the person consided is actually in prison

Infant, in law, means a person, male or female, under twenty-one years of age The status of infancy in law is of especial impertance in regard to contractual cap to ity and responsibility for cume (As to the effect of infancy on the validity of con the treat of intancy on the vindty of contract ver under Covinaris! An adult who has made a contract with an 1 can not make it void, though the 1, generally appealing can. A majo I at fourteen may contract vialid marriage, and a female I at twelve If two Is. below fourteen and twelve respectively, have morried, they need not remarry after attaining those years, provided they agree to or affirm the marriage that has taken place. Where the consent of parents or guardians is required a pib of banns is void if any one parent or guardian publicly dissents. A licence cannot be obtained by an I. without swearing that he has obtained the circumstances. To amount to murder

dead the guardian or guardians, if no guardians, then that of the mother, if unmarried, and if not, of some person ap-pointed by the court A marriage, however is valid without consent although the parties may incur ponalties, e.g for false swearing. An I husband may be such for his wife's debts contracted before marriage, but would not be liable to a greater extent than the property he may have acquired through or from his wife. For the responsibility of is for crimes, see under CRIMINAI LAW.

Infanta, the Sp. and Portuguese title formerly given to the princesses of the royal family, the eldest princess being also called 'la princesa' It corresponds to 'infante' the title formerly given to the princes of the royal house.

Infant Feeding, see CHILD Infanticide. The practice of I was common to ance nations, prevalent in India, especially among the high casto families of Raiputana, and in China down to recent times, and probably largely practist d among abouginal peoples at the present day. In the customs of savage races, I is closely associated with evoganity, or the custom of marring outside the tribal community female children especially suffered, for among savage tribes they were a source of weakness and danger, since they were useless as fighting units. With nations or peoples of a later date, especially the Hindus, the motives for I were occusionally religious or superstitions, but far more often merely pru-dential. The virtual stamping out in India of this practice—only too glaringly evidenced by the extraordinary dispro-portion of the male to the female population for again it was the females that chiefly suffered—is associated with the names of Jonathan Duman and May, Walker, who initiated measures which culminated in Acts authorising dists whose percentage of female children fell below a certain average, to be placed under police supervision. No less terrible in its incidents was the custom in China, and incidents was the custom in China, and although mitigated by the influence of Christian missionaries, there is reason to believe that it is still practised. As to clossical times, it is curious that the just with necessary (right of life and death) over his children which the Rom, father had till late in the list of Rom, jurishingless, and the analogous night given prudence and the analogous right given to the Ok head of a family, should have prevailed a late as it did in societies otherwl (s) highly intellectually endowed. Among the spiritans, too, there were laws positively enjoining the exposure of deformed children, as, indeed, at an earlier date among the Itoms. The combined effect of the legislation of Constantine, Valens and Volentinan, at a period strongly under the influence of the Christian fathers, put an end to the practhe of exposure and took away the paternal right of life and death. In England intentional or other inexcusable I, is either muider or manslaughter, according to the

it must be proved that the infant was in the legal sense a human being, or, to adopt Coke's phrase, 'a reasonable creature and being.' This means that the child must have completely proceeded in a living state from the body of its mother, whether it has breathed or not, and whether the umbilical cord, or navel, is severed or not. Therefore, killing a child in the womb is not murder, although it may well be punishable under the Acts relating to abortion. But if a child die, after being born allve, as a result of drugs or wounds received while in the womb, such I. is murder. (See also Abortion. Children, Cruellty to, Society for Prevention of: Concealment of Bisth; and Illegithmack.) The Scois criminal law is not dissimilar to the Eng. in this respect. All over Europe, and in some Oriental countries, through the exertions and pecuniary assistance of Europeans, a great deal has been done to prevent I. by the institution of founding hospitals. See J. Peggs, Infanticide's Cry to Britain, 1844; A. M. Cart-Saunders, The Population Problem, 1922.

Infantile Dalegia, see Birth-Paley.

Infantile Paralysis. populier name for

Infantile Paralysis, popular name for acute anterior poliomyelitis. It is a form of spinal paraly is, double confined to one limb and caused by an inflammatory affection limited to the anterior part of the grey matter of the spinal cord. It affects the function of motion but not that of sensation. It is commonent in the earlier time of childhood but is not actually confined to children. The beginning may be unsuspected, or often the onset is preceded by an acute febrile attack lasting some days; but in either case paralysis comes on, at hest, in some cases, very extensively, but later becoming limited to one or other limb or to a group of muscles. The disease is not progressive and, when its limits become clearly defined within a few days of its commencement, recovery, so far as other parts are concerned, may be assumed; but in the paralysed parts incomplete recovery of power is the general outcome (Black's Medical Dictionary). Large epidemics are not a feature of the discase in Great Britain. It was announced in Jan. 1917 that two members of the chem. dept. of Stanford Univ., Dr. Hubert's, Loring and Dr. C. P. Schwerdt, had isolated in a state at least 80 per cent pure the virus of policinvelitis, and thereby had opened the door to experiments for the development of a pure vaccine for use against I. P.

Infantilism, term applied to those conditions when childsh characteristics persist into later life. Where I. is myxedemations, it is due to atrophy or inactivity of the throughput of the throu

generally, or in some special direction. The cause is some constitutional derangement of metabolism, and the condition generally lliustrates the tendency under such circumstance towards modification of the secondary sexual characteristics. Myxagdematons I., or cretinism, is due to the disturbance of a specific secretion, that of the thyrold gland. If the gland is absent at birth, or is congenitally diseased, the sexual characters remain undeveloped during life, and the condition may not be observed until the time of puberty. face retains the chubby appearance of childhood, the voice remains of childish pitch, the second dentition may be absent or abnormal, the genitals are radimentary, and the mental outlook and intellectual activity remain those of a child When the thyroid gland is removed in adults, the resulting condition seems that of a partial reversion to childhood; the mental activities become slower and less complex. the patient is childishly irritable, and there is a marked loss of hair. The treatment of myxo-dema, whether occurring in adults, or as a congenital condition, includes ad-ministration of extract of the thyroid gland, which has been found of particular efflicacy in many cases. I. may also be due to nervous or emotional hold-ups, which can be resolved by psycho-therapy.

Infantry, name given collectively to a intantry, name given conectively to a body of troops who fight on foot and who are armed only with hand weapons. The Gk., Rom., and Gothic armies all had their supplies of I., but the I. in most cases was simply that part of the fighting force which could not be mounted. The mounted men were the chosen warriors, the I. the rank and file. The armies of Greece and Rome were usually composed of more I, than anything else, and the I, fought in close serried masses, and gave by their closeness an added strength and weight to their tactics. The period between the fall of the Rom, empire and the end of the eleventh century was that of the feudal armies, when battles were decided not by I. but by cavalry charges, and the I. of the decasted side were indiscriminately shoughtered. But a change was brought about first by the introduction of the archer, and secondly by the introduction of I. tactics which were capable of overthrowing the feudal cavalry. The battle of Faikirk (1298), between Wallace and Edward I., although it was not a victory for the I., nevertheless illustrates very trongly the new methods. The schilstrongly the new methods. The 'schil-tions' of Wallace, i.e the circles of spear-men, did much to hold the cavalry at bay. The best example, however, was Courtral (1302), where the burghers of Bruges overthrew the foudal army of Count Robert of Artois. Creey was essentially a victory for the new I, tactics. The age of the tendal army was declining; the combination of the resistance of the I, and the shooting of the archers seemed about to give it its death-blow. But the lessons which I. had taught during the Hundred Years' war were speedily forgotten, and cavalry again asserted its superiority. But from this time onwards I. became a defiof firearms naturally enhanced this result.
The period from the opening of the six teenth century proved that the archer was no longer of any great value, and for a time no longer of any great value, and for a time the I were armed in Swiss fashion with long pikes Finally, a combination of I armed with pikes and I armed with gunwas adopted, and as these tactics commanded the enemy both at a distance and at close quarters, for a time, at any rate, the problem seemed solved. The sixteenth the problem seemed solved. The sixteenth century and the early seventeenth was the age of the mercenary soldier. Against untrained rebels this type of soldier was invincible, and nowhere do we find a better example of this than in the pp wars in the Netherlands The Thirty Years' war had great results in the tactics of the I of

and then pouring in a maiderous volley and following this up with a bayonet charge The next great epoch making war, as far as the I were concerned was the Franco Prussian War of 1870 The massed firing tactics were almost entirely relegated to the artillery, and the I, in extend ed order, and taking advantage of overy inch of cover, slowly crept to the attack These methods subsequently underwent some change, especially as a result of the S African War, and later of the Russo Japanese War but the changes did not radically liter the principle and the at tack in ext inded order still remained the basis of I tactics

Recruting and Discipline The head of the other ranks' is the regimental



FAGLISH INFANTRY MEETING THE NORTHN CAVALRY In this panel from the Bayeux Tapestry the infantry are seen with javelin axe and bow

The methods adopted by Gus tavus Adolphus and the Swedes during that war were eagerly imitated by the rest of Europe Fspecially noticeable is it of Europe Fspecially noticeable is it that the arquebus used by the Swedes had been lightened and could now be fired without using a rest At the end of the seventeenth century we find that the old seventeenth century we may that the old pik tactics of the I pass away altogether. Ihe bayonet fixed to the muzzle of the gun took the place of the pike I irc tactics were adopted. The enemy were riddled with fire from the guns at as short a distance as possible, and then when the opposing ranks had been disagnified, the because thereights are not placed the attack.

opposing ranks had been distinated, the bayont charge completed the attack

From the year 1793 can be dated the beginning of modern I tastice. The change was due very largly to the methods of Apoleon, who, having pour d an overwhelming artillery free into the masses of the enemy, brought had I up to complete the attack. It was a combination of the two methods of artillery fire. complete the attack It was a combina-tion of the two methods of artiflery fire and I charges. The I methods of the Peninsular war were on the Brit d some-what different They were meddled on the old plat on free tactics of kiederick the Great, but they combined mobility features to the 1 of the Line. They proand an ability to use cover with the massed
strength of the former Ger type. The fundsh royal exacts consisted in reserving fire until the slows. The standard of recruit is high and
enemy were within easy striking distance, it would appear to be generally conceded

serge int major (warrant officer, class 1) the four company sergeant majors are warrant officers, class 2. Roth classes hold warrants from the Secretary of State bach regiment (except rifle regiments) carries two colours the first is the kings and the second the 'Regimental' Lach regiment of I of the line Lach regiment of I of the line had two battalions in accordance with the had two bittalions in accordance with the "Cardwell System estab in 1891 (See Cardwell, Edward, Viscols) all legiments (except the kings Royal Itile Corps and the Lifle Bigsde) but territorial titles, the majority connected with a unties Before 1881 each right much that a number () is but illon was leaves. always on foreign service and the other at home the rints were partly truned at regimeral dopots situated in the county or rea to which the regiment belonged a in heated by its title. They were then passed on to the Home Bat tall in which ompleted their training and, when required passed trained men on to the battallon in foreign service to keep it up to strength. The Loot Guards are Household tropps, but their organisation and training overspond in their main features to the Loot file Line. They provide weather was a light control of the Line. that the Brit Foot Guarda are the finest I in the world

Changes introduced in the organisation of the L in 1946 to meet the necessities of contemporary warfare altered the Card well system almost out of recognition Under the test of hattle experience the (ardwell system of linked hattalions twice broke down It was found, eg that one brigade of a div on an over-cas front might suffer such heavy ensualties that the reinforcements for its battalions on the lines of communication were madequite nine of communication were inacequited to reform its ranks while other brigades may have suffered no serious losses and in such cases these battalions obviously had to be reinforced from other regiments. Today the Cardwell principle, here here found the test and regiments. has been found to be too rigid even in time of peace. The foundation of icinforce ment under the Cardwell system was that there was an equal number of battalions at home and abroad but after the Second World War it was clear that fower I battalions would be required owing to the development of airborne and armoured dive, and also because the army in India would be heavily reduced after power was handed over to Indians Possibly the most convenient reorganisation for reinforcement would have been the forma tion of a Corps of I, in which postings could be carried out without regard to regimental ties—But this suggestion was resisted and compromise reached (1940) whereby a system of grouping was effected by the formation of lifteen groups of regi-ments with territorial or traditional connexions Every buttalion in each of the so self contained corp, returns its separate identity. In order to reduce the total number of battalions it was decided to relegate some to temporary 'suspended animation without officers or nien on their strength, but it adv to be recreated in emergency and in any case at the end of a stated period

I actual Organisation and types of men British Infantry—The number of men which can be controlled in battle by one commander is strictly limited. The basis Lactual Organisation and Lquipment of of I organisation is accordingly the sec-tion which is the largest group of men which can be per on ally controlled by its leader throughout the battle Sections are grouped into pix ones, platons into companies companies into battalions, and buttalions into I brigades which are the largest unit which consist solely of I This system known as the chain of command. chaures orderly mand uvres by any number of units in accordance with a single plan, and chables the section commander to assist in giving practical effect to the plane and instructions of the commander in chief An I but alion consists of head quarter company support company, and four 'rifle' (in fact, light machine gun) companies It is commanded by a lieut colonel, with a major as second in command. The headquarters company is com-

The section is the fire unit Companies of each battalion are designated by serial letters or numbers, platoons are numbered serially throughout cach bat tahon

After 1936 all I battalions of the Brit Aimy gradually became either 'machine gun battalions' or 'rife battalions,' so as to provide I brigades consisting of three rifle battalions, and one machine gun battahon each

During the I irst World War open war fare had soon become impossible, and the employment of cavalry was very much cuitailed on the W. I ront and not only was the evalry converted into I, but the proportion of I to other arms greatly in creased. Before the introduction of tanks a battle was usually a contest between opposing I supported by artillery Assautillery could not advance to hold posi

tions offensive action fell entirely to I

The modern Brit I is equipped with The modern Brit 1 is equipped.

rifics bayonets, grenades, Vickers mad inc guns, Bren light machine guns sten sub machine guns, mortars and antitank guns and antitank projectors. Antiplicity of weapons and methods calls for a better type of recruit than formerly if he is to a implate the knowledge for their effi cint application. Consequently educational training now forms an integral part of the Brit soldier's life More attention also given in the modern army to the sold and recreational training so as to the infantary recreations training so as to choure fitness for sorvice under more streamons cond tions. The kit carried by the infantryman has been increased in order to provide him with the means of defence (1) against shrapped by the provision of a steel holmet and (2) against gas by the provision of a gas respirator. These additions hinder mobility to a certain extent and I are now if required to operate it a distance transpirted of her by road or ty are This fact his given use to two specialised types of I buttalion—the m stor battalion which f rms t integral part of aimouned torn it t at the ah borne or parachute latt di l'annaported either by glider or ty i of irrying air coaft. With these two el tions Brit. I lattilions fend to b 3 more uniform type than those of most immessince there s no special estab for lifte (Jaeger, Chasseur or) of inountain (tabiry-jaeger, Chasseur fir in) units

i further characteristic of Brit tactical I organisation is that whereas the regi not of most armise consists of two to four partly 'rifle' but thous together with minuter gun, and the and sometimes cuginar companies which all form an integral part of the regiment, the Brit bright is essentially a team of these lidenical battallons. In action this can for na Brigade Group (U.S. Combat Team) together with a very thought the state of the control of the combat Team). together with artill rv, engineers, anti-tank guns etc allocated from other arms of the div, but in a lation each battalion disposes, in its support company, of its manded by a major or a captain. The platoon is the smallest I unit which can be divided into interdependent bodies each capable of fire and managure. It machine-gun platoons Where machine is thus the unit on which all I tactics are

of 1935 still exist, they are under the command of divisions or of higher formations. Infant Schools. The Swiss reformer-pastor, Jean Fréderic Oberlin (1740–1826), pastor, Jean Fréderic Oberlin (1740-1826), was the founder of I. S. on the Countinent, but Robert Owen (1771-1854), the Eng. social reformer, independently inaugurated the idea in Sectiand by forming a crèche at his father-in-law's cotton-mills at New Lanark on the Clyde. This crèche became the nucleus of a school guided in 1816 by a headmaster, James Buchanan. In 1818 Buchanan was put in charge of an I. S. at Westminster, and on his advice Samuel Wilderspin was given the headship of a school in Sutultibility in on in advice Stating of the Spirit was given the headship of a school in Spiritlields in 1820. When the London Infant School Society was formed in 1821 Wilderspin superintended the opening of numerous schools. David Stow (1793-1864) was instrumental in forming the Glasgow Infant Company of the State of State instrumental in forming the Glasgow Infant School Society in 1826, which performed pioneer work in Scotland. The influence of Friedrich Wilhelm August Friedrich 1832 (gr., the tier, educationist, made itself felt in the middle of the ninetcenth century in England, and the first Kindergarten (q.r.) school was opened in Hampstead in 1553. Physical exercises and games, story-telling, and the use of the Froehel 'Gifts' were now used in the education of children under legal school age. Dr. Montessori's system, signally successful in Italy, was introduced into England early in the twentieth centre. tury, with its revolutionary ideas of childfreedom, and the encouragement of indi-viduality among children. At about the same time Margaret McMillan instituted her Open-Air Nursery School in the shim dist. of Deptford, naming it after her sister Rachel, who had shared her enthusiasm for child welfare, but had died before this scheme could attain reultion. In open-air shelters children are taught the elementary facts of health and cleanliness in addition to their juvenile lessons; they are taught personal service; certain stated are taught personal service; certain stated times are given to rest; and good food is provided for them. See D. Salmon and W. Hindshaw, Infant Schools, Their History and Theory, 1904; P. B. Bullard, Practical Infant Teacher, 1929; J. W. Adamson, English Edwardin, 1769–1902, 1930; Margaret McMillan, The Nursery School, 1930; Margaret Lowenfeld, Play in Childhood, 1935; Maria Montessori, The Serret of Childhood, 1936; P. E. Cusden, The English Nursery School, 1942. Infant Welfare, see Marenviry and Infant Welfare, INFANT WELFARE. Welfare, see MATERNITY AND

Infection, distinguished from contagion (2.v.) by reason of the fact that it signifies the transmission of a disease without direct contact. Thus infectious diseases without direct contact. Thus infectious diseases without direct contact. Thus infectious diseases are usually contracted by breathing. In malarial disease, e.g. ague, the disease characteristic on the courts of the univs. of the courts of the univs. of the courts of the univs. of the courts of the univ. In a some way, but there is no conclusive party, at least where the cause of action arose within the libertles of the univ. Typhold fever is infectious, and is usually give redress in actions of an eccles. Courts (2.v.) the court of Passage of Liverpool, and the Salford Hundred Courts distanced in the reliable to the reliable to making the Salford Hundred Courts all exercising within the Fourts of the univs. of Carbon and Cambridge lave by anct. Charters a junisdiction in actions to which the Salford and Cambridge lave by anct. Charters a junisdiction in actions to which the Salford Hundred Courts of Liverpool, and the Salford Hundred Courts all exercising within the Fourts of Liverpool, and the Salford Hundred Courts all exercising within the Fourts of Liverpool, and the Salford Hundred Courts all exercising within the Fourts of Liverpool, and the Salford Hundred Courts all exercising within the Fourts of Liverpool, and the Salford Hundred Courts of Liverpool Hundred Courts of L

contagious. I. depends upon the presence of a germ (q.r.), and prevention is best effected by isolation. See articles on the diseases mentioned, and BACTERIA, CON-PAGION, DISLYREMANNS, and HYGENE. Infettment, or Sasine, in Scots law means

both the act or symbolical ceremony of giving to another the possession of heritable land and the writ or instrument of sasine in which such act or ceremony is expressed. I. being a feudal act, and the crown being the lord paramount of all Scottish feus or fiers, an I. can only be under a grant from the Crown. This is interpreted in prac-tice to mean, that to constitute a valid I. the transferee must show a fendal chain of title going back ultimately to the crown. But there may be real rights without I. These exceptions include leases, servitudes (analogous to rights of way or other rights over the land of another), udal lands situate in the Orkneys and Shetlands, crown lands, and churches and glebe of the Church of Scotland. The chief methods of I. now in vogue are: (a) By direct registration. (b) By transmitted warrants, i.e. by a transferor who is not hunself infeft and can only transmit through another. By notarial instrument, used where the disponce does not wish to record the whole of the conveyance. (d) By warrant of registration under the Land Registers Act, 1863, and the Consolidation Act of 1868.
(c) According to the clause of direction in a deed to record the deed in the Register of Sasines. It has long been settled that a purchaser, or a londer on heritable se-curity, is entitled to rely on the registerof sasmes, and is not affected by any conveyance or encumbrance which is not recorded on the register.

Inferior Courts comprise in England all those that are below the dignity of the High Court of Justice, and whose decisions are subject to review by the High Court. The prin. I. C. exercising civil juri-diction are the co. courts, from the decisions in which an appeal lies to the High Court where the amount involved exceeds 220. Where the plaintiff in the High Court has no visible means of paving the defendant's costs, the defendant may, on swearing an affidivit to that effect, get an order re-mitting the case for trial in the co. court. There are also certain local courts exercising a considerable civil jurisdiction, the most important being the Chancery Court of the County Palatine of Lancaster, the powers of which, within its local limits, are similar to those of the Chancery Div. of the High Court, the Mayor's Court of London, the Court of Passage of Liverpool, and the Salford Hundred Court, all exercising within their local Huntra a full common law jurisdiction. The courts of the univs. of Oxford and Cambridge have by anet. charters a junsdiction in actions to which any member or servant of the univ. is a party, at least where the cause of action arose within the liberties of the univ. Other I.C., called the Eccles. Courts (q.v.)

(1) The general co inferior degree are sessions or quarter sessions (see COUNTY Sessions), which is a court of first instance and of appeal against summary convic tions by petty sessional magistrates. An indictment (q, r) may be removed to the King's Bench Div from quarter sessions by writ of certiorari (q v) in certain cases such as where an impartial trial cannot be had in the I C, or some more than ordin arily difficult point of faw is involved (2) bor quarter sessions, with judicial functions dentical with those of the co-quarter sessions, and presided over by a recorder who becomes a bor magnetrate session. writtle ffice (1) petry sessional courts consisting of it least two instices or a police or stipending magnitude or the lord mayor of an alderman in the city of London These courts have a limited jurisdiction to try indictable offences under the Summery Jurisdiction Acts The King's Bench Div can grant a cotherer to transfer tease to the High Court where the magistrates exceed their juris diction or there is some meanifest informal ity, and on a special case stated by the jus-tices can decide any point of law submitted for the decisio High Court Again the High Court may Issue a writ of pre hibition to top proceedings wher the magistrates have no jurisdiction and generally so iking my I C which at tempts to exceed the limits of its an di tion may l' prevented by such a writ and conversely a writ of mandamus may be issued to compiling I do exercise its fort diction at all events in easies where i lief is son lit in respect of the intringe

inent of a new blie right of duty
Inferiority Complex, in paych analy i | 1
an emotion lade of the self of (5) who unconscious activity gives the suff i i unaffective attitude of inferiority toward himself. It has its origin in a w in fe i narcissism or self love and may lead to a nemosis which cause the person to doubt

his cipacity

Infidel, tern popularly used to describe a person who rejects Christian ty as a divine revelation. The word does not property apply to heatheus or heretics Moslems employ a similar term (groun) 'kiffle etc) to describe (hristlans

Infinite, connot a chiefly the attribute of the Deity of Ab olute Being but is als of the beity of vo of the being out is and to describe the boundlessn is an immeasurableness of space time or the universe. The use of the word in the Milosian school of the philosophers of by Anaximander marks however crudely the beginning of an attempt to give a scientific statement of the universe often assumed by modern thinkers that the Ga philosophers, and even such modern philosophers as Hobbes and Hegel confounded the idea of the 'innicesurabl' with that of the 'unbounded' because to argue that space is as 'measurable 'a

becoming bounded by merely cutting off a small part and leaving the line bounded by the two terminals so formed Whether the anothods, which attempt to apply the rigid exactness of mathematical scene to philosophical theories of space, are valid depends on the extent to which th variable said themselves to postulate such arbitrary assumptions as that space 1 man way analogous to a sphere or that in I line becomes finite by imagining a perit of section

Infinite and Infinitity are perhaps the most difficult conceptions mathematicians have to make Infinity is defined as being that cuantity which is greater than every the sign co. It is most easily concerved as th sign co a limit, eg as the quantities 1, 1, 1.

gct smaller and smaller, so n gets uger and larger and the limit to which n

tends to reminite simal $\frac{1}{n}$ tends to zero, 130 In higher geometry parallel lines are the c which meet it nimity, and the
by options of an hyperbola are the tan
fort c the curve at points on it infinitely
has all points at mininty are on the inc it minuty v hose equation is x + y = 0 and all circles pass through two in samery points known as the circular

sts at min its

infinitesimal, in mathematica is defined

inimitesimal, in mathemat, a is defined a a quantity smaller than every assign at a quantity. The id a ct and a so obtain 11 support a quantity to decrease in tamiety but yet never actually to be not of a fine of the actual through in general and a properties of the second order and similarly in a feet test of the count anson with a state of the second order and similarly in a feet test of the second order and similarly in a feet test of the second order and similarly in the second order and se n a lene gleeted in comparison with c A in to de oucception is obtained in astro initial problems the distance of most that this from the carth a very great, and the ridius of the earth as such in come is no that it may be regard as an I cal respected in the calcilities without ini loss of accuracy luc racio of two indefinitely small merements or I's, of v dependent variables evaluased as dr.

us the basis of the differential calculus

Intrmary, see In 18111 118

l mammation, term used to denote cer nti su chin, whi h tre accompanied on and he at sentitions of reduces, swelling, an and he at sentitions I is primarily a precisive process by which the body tempts to get rid from a fritating or in the most exercise disease and injury. Modern in street a factor of all most exercise disease and injury. th mes tend to attribute the symptoms known as 1 to reat one between microbes and the white corp wells. Where the tis sue are injered at i no germs are present to argue that space is us 'measurable 'a' the process of each rock now the surface of an imbounded sphere is body, or the necessarity unbounded circumference of a vast circle, and, again, be cause geometry can conceive of an immeasurable and unbounded straight line of an excess of blood. The blood stream is retarded in the region of irritation; this gives the red appearance and also accounts for the sensation of heat. The blood vessels become dilated and there is considerable effusion of white corpuscles through the walls of the vessels. The continuance of the irritating stimuli part with still great effusion of lymph and white corpuscies, so that the part swells, the feeling of heat becomes more intense. and the pain takes on a throbbing character owing to the communication of the motion of the heart to the dilated arteries. The white orpuscles are busy destroying germs, dead tissue is being detached, and new tissue built up; the products of I. are carried away in the blood, or discharged from abscusses, etc. The treatment of I. involves antiseptic dressings in case of skin I., lotions and gargles in the case of I. of the nose and mouth, while if the I. is situated in any portion of the alimentary canal, the natural processes by which waste and injurious products are got rid of may be helped by suitable drugs. To lessen the discharges and subdue the inflammatory process astringents are employed.

Inflammation of the Eye, see Intils.
Inflation and Deflation. Where a rise
or fall in the general price level is due to an increase or decrease, actual or prespec-tive, in the supply of money we have in-flation or deflation. Commonly, I. and D. connotes abnormal expansions or contractions of money associated with marked effects on the price level. Slight inflation tends to stimulate trade, since if people expect prices to rise tomorrow they hasten to buy today. Deflation works the other to buy today. Deflation works the other way, since it lower prices are expected buyers will wait. A fall of particular prices does not mean deflation: it may be due to increased efficiency.

Inflation, or rather the policy that makes it inevitable, has great attractions for the statesman. It is a thankless task to refuse claims, eminently reasonable in themselves, for more wages, more salary, more compensation, etc., and a great temptation to follow, in greater or lesser degree, the line of least resistance. But if the money is not there concessions mean its undue creation, and the dilppery dope of inflation. While slight inflation may be innocuous if not advantageous, high inflation means total loss of faith in the currency, ruin to those dependent on savings, and general dislocation of business with wages and priors chasing one another in a vicious spiral.

The terms I, and D, came into use in

the letter half of the infection into use in the latter half of the infection into general use during the First World War. The paper 'greenbacks' of the Amer. Civil War represented a con-siderable inflation but the First World War and its aftermath produced inflations of quite a different order. Russia, Austria, and Germany all experienced high inflation. In Germany in 1923 a new mark, the Rentenmark, was introduced, ex-changing for one billion old marks. In

their way by taxation and savings and, to fill the gap, resort to borrowing from the banks (so causing the creation of banks money) as well as to printing bank-notes. Even so Germany emerged from the First World War with relatively moderate in-flation: it was in the special circumstances of the post-war years that the mark be-came practically worthless.

The following figures of percentage increases in wholesale prices give an indica-tion, by no means precise, of the inflation which occurred in certain countries over a ten-year period (1937 47) covering the Second World War:—

					rer cem
United '	iates:				76
United !	Kingdo	om			7.7
Switzer			•	•	101
France (1038-	171	•	•	559
	1000-	**/	•	•	
Japan	•	•	•	•	3,761
Italy _	· . · .		•		٠,٤١٩
Poland (f livir	ıg: \\	/ar-	
5aW 0	nly)				14.953
China					2,631,000

Beside paper inflations on the Ger, or even the Chinese model, metal inflations seem of small account. Nevertheless the seem of small account. Nevertheless the Sp. conquest of America brought large quantities of the precious metals to Europe and red the inflation that funned trade in Shake-peare's day, besides helping to diminish the value of royal revenues and send the Eng. monarchy to Parliament for more and more money. Again, the discoveries of gold in California and Australia in the middle of the last century inflated the money-basis of the gold standard countries. Later, improvement in mining technique had a similar effect. On the other hand the demand for monetary gold may itself cause a gold dellation, as oc-curred notably in the latter part of the nineteenth century and again between the wars. Superimposed on such basic move-ments the 'Trade Cyclo' brought its own alteration of I. and D., boom and slump. While the inflations of the Trade Cycle were in no way comparable to the extreme inflations of modern times the loss, unemployment and distress caused by the deflationary phase induced a search for less drastic ways of adjustment. Present hopes are centred in the International Monetary Fund. (See Briefron Woods AGREMLYS, ECONOMICS, and MONEY, Drastick to the table of the Control of the Co One point emerges; just as the stability of the paper C depends on Parliament so, in the last resort, does the continuing decision to remain on a gold standard. A Parliament that in due time takes the necessary steps for remaining on gold should not, alternatively, fall to take the necessary steps to prevent an undue depreciation of the paper &. But Parliament is not uninfluenced by public opinion: under the gold standard deflationary measures were perhaps made more palatable to the wage-earner by judicious reference to the necessities of 'economic law 'although this did not prevent stronuous opposition to the wage adjustments that were a part of the gold standard mechanism. If real income has to be cut there is no doubt that inflation will do it modern war nations find it increasingly there is no doubt that inflation will do it difficult, not to say impossible, to pay less painfully than the gold standard; but inflation is the 'slippery slope,' and that umbellate fashion, each branch producing remains the dilemma.

inflation is the 'slippery slope,' and that remains the dilemma.

See R. C. Hawtrey, The Gold Standard in Theory and Fractice, 1927, 1947; Iteport of World Economic Conference, Geneva, 1927; J. T. Peddie, The Dual System of Stabilisation, 1930; L. von Mises, The Theory of Money and Credit, 1934; F. Benham, Economics, 1938, 1948; G. Crowther, Outline of Money, 1941. See also Bankis And Banking, Churrency, and Paper Money.

BANKING, CURRENCY; and PAPER MONEY.
Inflection, or Inflexion (from Lat. inflectere, to bend), in grammar, the variations, changes, or modifications of form which words undergo to express various relations with other words of a sentence or clause. It forms an important div. of philology, and is subdivided into conjuga-tion (verbs) and declension (nouns, pronouns, adjectives). Gender, number, and voice, as well as case, tense, mood, and person may be expressed by 1,, and some grammarian, include comparison of adverbs and adjectives also under this head. I. is roughly speaking, a mark of Indo-Germanic and Semitic languages as opposed to agglutinative or analytic. It may be internal, initial, or final in Semitic, but is usually final in Indo-Germanic words. except in cases of re ' rication. Modern Eng. has comparatively few Is. left. See also GRAMMAR, PHILOLOGY. See O Jesperson, Progress in Language with special

reference to English, 1894.
Inflorescence, in plants is the floral region, the mass of flowers, the botanical term to indicate the manner in which the thowers of a plant are grouped. The sim-plest form of all is a solitary terminal flower, e.g. daffodil, but more often there is a more or less complex system of branching (q.r.) in which the branches do not develop into foliage-shoots but bear flowers. The stalk upon which the flowers are borne is known as the peduncle or rachis; if the flowers spring directly from the peduncle they are said to be sessile, but if they depend from a secondary stalk they are said to possess pedicels. An I. found at the apex of a shoot is terminal, if found in the axils of leaves it is axillary. There are two distinct types of I.; in-definite or racemose, when the flowers at the base open first; and definite or cymose when the flowers at the apex first become mature. One of the commonest forms of the indefinite I. is the raceme, m which the flowers are connected to the peducele by pedicels, e.g. lily-of-the-valley and birdcherry. The corymb resombles the produced at different levels, are all of different lengths and the flowers are hrought to the same lovel, e.g. candythat Pyrus sortus. The spike is an indefinite I. Pyrus sortus. The spike is an indefinite I. with sessile flowers, r.g. plantain and gladiolus, while the catkin is a long, deciduous crowded spike bearing unisexual decidence crowded these bearing unleaving theorem, e.g. hazel and birch. In the panicle the axis of the I. branches, and each branch forms a raceme, e.g. cats and traveller's joy; in the simple unbel all the pedicels are given off at one level owing to the abbreviation of the mother-axis,

umbellate fashlon, each branch producing a simple umbel, e.g. hemicek and carrot. The type common to flowers of the family Composites is the capitulum or head, in which the flowers are sessile and are borne on a shortened mother axis, e.g. Olearia and dalay. The curious I. known as a thyrsus is mixed, being a raceme itself composed of short cymes, and is found in the like and horse chestnut. A dichasium such as is seen in Euonyasus is a biparous cyme in which each axis produces two daughter axes and onds in a flower. The I. of the fig is a peculiar, hollow, pearshaped capitulum, and the flowers are produced internally; this is called a hypanthodium. The verticillaster, common to the dead-nottle and Jerusalem sage, consists of what appear to be whorks of flowers, but these in reality stand ene above the other and are borne in the axils of leaves on opposite sides of the stem. Finally, a glome fulle consists of a number of cymes united to form a head, e.g. box and nettle.

glominale consists of a number of cymes united to form a head, e.g. box and nettle. (See illustration, p. 504.)
Influenza scens to have been spread through Europe during the Crusades. Supposed to be an infliction of heaven, I. was named the influentia cali. From this was derived the It. name influenza, first used in Eng. by Huxham in 1767. I. is popularly confused with a severe cold in the head, but although it has many resomblances to catarrh yet there are points of difference. Thus I, brings with it an imdifference. include depression of spirits, and sudden debility. The sense of taste and appetite debility. The sense of taste and appetite are lost, the tongue may become white and ereamy; while sneezing and running of the eves are frequent accompaniments. Shivering fits commence the course of the disease, accompanied by a rise in temp., headache, pains and soreness all over the body, while the pulse becomes weak, and the skin, at first hot and dry, becomes most. In ordinary cases the scute symptoms of the skin and the skin at first hot and dry, becomes most. toms pass away after three days or more, when with care convalencence begins. There are always dangers of relapse, and premature exertion may easily bring on heart disease or even wreck the nervous system. I. is an epidemic (often a pan-demic) disease, and spreads very rapidly. The atmospheric condition with which it is connected is not known. It may occur in all kinds of weather. It is known, however, to travel generally westwards or from S.E. to N.W. Thus the great epidemic of 1559-90 started in the Far East and spread rapidly over all Europe, and became the worst epidemic experienced for forty years in Britain. Since then it has appeared epidenneally annually in some part of the Brit. Isles.

Pyrus sortus. The spike is an indefinite I. with sessile flowers, e.g. plantain and gladiolus, while the catkin is a long deciduous crowded spike bearing unisoxual flowers, e.g. hazel and birch. In the patient the axis of the I. branches, and each branch forms a raceme, e.g. oats and traveller's joy; in the simple umbel all the pedicels are given off at one level owing to the abbreviation of the mother-axis, and e.g. dwarf-cherry and cowslip; in the compound umbel the axis branches in an of the attack, and in cases where cardiao



TIPES OF INFLORMSCLNCE

R Paceme—Bird Cherry. B Panicle—Fraveller's Joy. C Corymb—Pyrus sorbus. D. Catkin—Hazel. D. Single male flower of Hazel Catkin. E Umbel—Dwarf Cherry F Capitulium or Head—Oluarus Haasiis. 1. Stamens and pistil of inner florets. F. A single ray floret. G Thyrus—Lilac. H Dichasium—Ruonymus. I. Hypanthodium—Fig. 1. Single female flower. J Verticillaster—Jerusalem Sags. J. Longitudinal section of same. K. Glomerule—Box.

irregularity occurs, heart tonics are administered. Then in the convalescent stuge, rest and the moderate use of stimulants, together with nerve tonicy like pre-parations of iron, quinine, and strychnine. or hypophosphates, etc., are the best means of overcoming the resultant debility. A see voyage or a few weeks at a watering-

place is, however, the best cure.

During recent years, efforts have been

made to collect accurate statistics relating to L and to trace its cause. Recent pandemics have been preceded by scattered cases, and evidence shows that the first great wave of the disease is characterised by symptoms of severe and acute fever, with little affection of the upper respiratory tracts. These are much more definitely affected during the second wave, following about two months later, in which bronchitis and pneumonia are common secondary developments. Later may fol-low a third wave, usually less severe, and characterised by tendencies to catarrh and pulmonary trouble. In some pandenics there have been waves of gastro-intestinal and of nervous type. In epidemics of L the predominant batterio found in indi-Viduals Suffering a months disease are Bacillus influenca, discovered in 1892 by Pleiffer, various streptococci, and Bueillus procumes and some of these seems to be invariably present. Fulk and his col-leagues, working on the L epidemic in Chicago (1928-29) identified a streptochedge (1928 29) identified a steepho-coccus which they believed to be the prim-ary infective agent. It is known now, however, that the cause of L is a filterpassing virus originally discovered by Dr. C. F. Andreweg. The viruses of influenza C. F. Androwes. are minute creatures, a traction of the size of germs such as those that cause boils. and they pass easily through the porce of such fine filters as earthenware rods which can hold up the larger bacteria. munisation, such as is practised for diphtheria, smallpox, and other illnesses, can thera, simulpox, and other timeses, can be provided for 1, but there are greater practical difficulties in making anti-L vaccines. For the viruses have to be grown on hens' eggs and the supply of sufficient of these to produce sufficient vaccine for

search on this subject. Diagnosis of the di-case, though com-paratively easy during epidemics, is still unreliable in isolated cases because the symptoms of the various forms of I, are so diverse. The view that these diverse forms are manifestations of the same disease, varying in character and intensity, is an outcome of the work mainly of Brit. , epidemiologists. See BACTERIA and EPI-

a whole pop, poses practical problems. The immunity again t I, can, as yet, be made to last only a few months and would times a year. The I. Unit of the World Health Organisation is engaged in re-

DEMIOLOGY.

In Forma Pauperis (' in the character of a poor man'). Any person may sue or defend an action as a pauper on proof that he is not worth £25, his wearing apparel and the subject matter of the cause only must lay a case before counsel for his opinion as to whether or not he has reasonable grounds for suing as a pauper: and no person may sue as a pauper unless the statement of the case laid before counsel for his opinion, together with the counsel's opinion and an affidavit by himself or his solutor that the statement of the case sets out fully and truly all the material facts to the best of his knowledge and beliel, are produced to the court or judge to whom the application to sue in forma pauperes is made. No court fee is paypauperes is linde. No court tee is pay-able by a person admitted to sue or defend in forma pauperis. Where a person is admitted to sue or defend in forma pauperes, the court may, if necessary, assign him counsel or solicitor, or both, to assist him, and these latter may not refuse assistance, except for good reason shown. Int person who agrees or endeavours to take or obtain any fee or reward from a person admitted to sue or defend in forma purpers for the conduct of the business as to which he has been so admitted is guilty of contempt of court (q.r.); and if the pumper hiszant agrees to give any fee, he will be at once disentitled to sue or defend in the same case as a purper. It is the duty of the solicitor assigned to a pauper litizant to take care that no notice is served, or summons issued, or petition presented without good cause. See also Poon Prisoners' Defence.

Information: (1) Mode of proceeding against persons accused of crimes other than felonies. It is a speedy process, which brings an affender to trial without a previous finding by a grand jury. Such criminal Is, are of two kinds: (a) Is, ex othern, and (b) Is, by the Master of the Crown Office. The former may be used in certain cases of misdemeanour, such as seditions libels, or riots, oppression, and bribery by imagistrates or other others, or other unsdemeanours tending to the dis-turbance or danger of the gov., where the circumstances are such that the codinary delay- meidental to legal process must be avoided. In form an ea officio I, is a tornal written charge of an offence filed by the attorney-general in the King's Bench the attorney-general in the king's Bench Dry. A Crown Office I, is yiled in the King's Bench Div, by the Master of the Crown Office on the application of a private individual. Leave of court must first be obtained, such Is, are only granted in the case or suggestions of the commission of infederations of the commission of infederations of a gross and notorious kind, i.e. agravated libel, bribery at elections. In practice 1s, for fidel are only granted where the person libelled occupies a public office or position. After a criminal 1, of whatever kind has been that the most better the contract of the co been filed, the accuse his tried in the usual may by a petty jury. (2) A charge made to a justice of the peace or stipendiary or other magistrate of some offence punishable on summary conviction. A justice cannot issue warrant for arrest in the first instance, except upon an I. or complaint m writing made on the oath of the in-formant or other person on his behalf. Where a summons only is issued in the excepted. Before being allowed to appear that unstance the L need not be on oath or in formu pauperis as a plaintiff a person in writing. See Archbold's Criminal

E.E.



INTER SECTION OF A STATE OF ST

Instrument the 15 With a ter Cumb rhall a problem to the limit of the v rs t rts m It was tak a with i vertituri il wastak n with li i aliquit the easterne ast fil lint in it part the island it to lailagia in the piture n li ritt fore (llisa in the undure titliga k to the familiovitities) in the film in the fitting fitts fulls away from th in hwelle

Pleading Linetice at 11 ten e Asussell, I London included the press and censorship On Crimes

Information, Central Office of estab on April 1 1946 is en a Manisterial gov dent with a separate vite to curv on most of the complete vite to curv on terms carried out by the Ministry of In formation Its m on i inctions are to act tion of publicity materia r quested by depts, including adverts neuts films pl row iphs and exhibitions. Its offices at at Norgeby House I ike St. London, W. I.

Information, Ministry of trew out of the but 3) Office publicity defended in and existed a a chidow organisation for more than as a below it became a my relatigor deet in set 1959. Leed We mill in the fir t minister was in office t in the out he is a corded by Sh. Her Perh. Live months life Mr. Duil Cooler took charge and continued till July 1941. There was considerable criticism when it was an nounced in Nov. 1939, that the staff muin There was nou iced in No. 1939 that it is stait num-bered no fewer than 999, and that were allegations of time wasting in line ptitudo When Mr. Brendan Bracken became minister n July 1941, the staff in London and in the regional offices and abread totalled (r 1900 and the wage bill was ±2,721,000 a year By that time, however, the MOI had become a smooth working the MOI had become a smooth working ning the ap and easy victories against small and efficient organisation. Almost every nations worder, these methods were aspect of first, publicity was dealt with by often mix onceived. It was often error the MOI. The depts in Malet Street, erously assumed that the opinions of all

organistion film publicity and a refer ence lit rary of newspapers from all over the wall On every important development of the war new paper representatives in th Am stry building were summoned to the two som where the information was icil to them and from the conference h II I tform leading person there of the will lid their stores to the pressure and t in I to the questions rused by the latter. The govern Dec 1111 decided to bing, the MOI to an end and to set up in it the deputinental information ser-VΙ it lemented by a central office with it territors both for home and overnţ (1 114 I FORMATION CINITAL OFFICE OI)

At the outset the MOT was expected to line I me to Ger cathens the evils of the result bey were upholding by war to put B tiln's policy before the neutrals and above all to win the fullest possible support it in the U.S. Vand to keep up the spirit of our own people. To carry to corry out these ums it was very properly de-ended from the stirt that the MOI. should send out plain truth and not seek to outdo Di Goo bhels in his methods of bican menderly if our methods did not not first sem to pay it was largely because no counter-propaganda could effect much in the days when Germany was win-



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A PANORAMA OF THE 1511 OF WAY

The fresherton ground by the long to uslons of the approximation of a great lake Some objects such as foliace do a negative to the entropy byte of the wind by usland to under the long of the source of the long of trees phote explicit in sunshine upp at a reerd with laifr storenm

The photomisph is tilen the Layer Refer is a light material rand pas

were moulded by leader writers, whereas has turned king's evidence in fact with the mass of people, an exciting story or a dramatic news reel makes i much stronger appeal than the enunciation | of a principle | Morcover the censorship office worked on the wrong lines, as if they did not understand fully the moral value m ide n study of the propiganda triumph-of Lord Northelife, Lord Beaverbrook, and [Sir Campbell Stuart in the Erist World War and he became more than a match for Goebbels. The But respect for truth had the thirt won Britain a wold and length won Britain a wold and length that believed what she said, and the M.O.I. having long since emerged from its teething troubles (M. Atthee), had become a staunch and efficient ally of our

fighting forces and home front alike informer, a common I is one who pre-fers an accusation against another, with the object of recovering a statutory te ward for so doing Any person may bring criminal proceedings on behalf of the crown in the absence of express statutors provisions to the contrary Ciril proceedings for penalties can only be brought

An Act of 1400 provides for punishing false Is See hu sell On Crimes

Infra-Red Rays, invisible heat rays of loneer wave length than the longest visible office worked on the wrong lines, as if they invoid the spectrum, the red first ob-did not understand fully the moral value served by Herschel in the solar spectrum of news. But many improvements were in 1800 glass is opaque in these rays, made by Mr. Duff cooper and they were I hey are of service in long distone photo greatly developed by his successor, who graphy, and their use his merased the knew the press, the United States, and p wer of searchlights etc. to renetrate Brit Finpire and had the lighting spirit (douds and tog. Portruts can be taken, of Winston Churchill. Mr. Bracken had with short exposures in rooms 'illiuming and be study of the propagated triumphs. clouds and tog Portruts can be too so, with short exposures in rooms 'illiuminated by infrared both only, using the lays Foliage t ites sensitive to I he lays. Foliage este tally when it his been in similarly, icheels infra red rays so strongly that trees, etc. seem white in initia red photo-striphs. I. R. telescopes combined with searchlights were used during the second World War for night observation. I.-R ins are also used in the inpentic treat-ment See also 1000, REFRICTION,

Infusion, processole virucing the active principles of vegetable substances without boling. The product of the process is also turned an I. The general method is to digest the parts containing the substance to be extracted in water. If the substance is polatile and is soluble in cold water, it is better to digest the material in by Is., where a statute expressly allows cold water, as it can then be extracted them to do so, and in any case must be without admixture of other substances, brought within a year of the alleged long active principle, are, however, more offence. In another sense, the term I, is readily soluble in hot water, and the temp, used to denote an accomplice in crume who should be regulated according to the degree of volatility of the substance. When it is necessary to boil the mixture the process is known as decoction; this is often ac-companied by chemical changes in some

of the substances concerned.

Infusoria, term applied to numerous classes of active protozon appearing in stagnant infusions of animal or vegetable matter. The majority of them occur in great numbers, and are provided with vibratile locomotor processes of their living matter, which are practically permanent, and express the predominantly active constitution of these cells. When dirty water is held in a glass vessel between the eye and the light I. are generally quite visible, though most of them are micro-scopic. They occur both in fresh and salt water.

Ingatestone, small tn. of Essex, 6 m. S.W. of Chelmsford. It has an interesting Norman church with a lifteenth-century tower, and Rom. bricks have been set in the walls by the builders. An Eliza-bethan manor-house was a refuge for Rom. Catholic priests during the Reforma-

tion. Pop. 2300.

inge, Very Rev. William Ralph, Eng. divine, b. 1860 at Crayke, Yorks.; eldest son of Rev. Win. Inge. D.D., provost of Worcester College, Oxford. Educated at Eton and King's College, Cambridge where his career was brilliant. He was where his career was brilliant. He was assistant master at Eton 1881-98; fellow and tutor of Hertford College, Oxford, 1889-1904; Lady Margaret prof. of divinity Cambridge, 1907-11; dean of St. Paul's Cathedral, 1911-34. In theology, I. is an extremely liberal Protestant - holding miracles and all such materialistic adjuncts of religion very cheap. But what makes him one of the most prominent clerics in England is his insistence, in learned books and popular journalism, on Platonic principles as guides to Christian practice. parent opposition to democracy, combined parent opposition to democracy, combined with his dry and austere manner in the pulpit, earned him at one time the sobriquet of the 'Gloomy Dean.' His writings include: Society in Rome under the Casars (1886), Elon Latin Grammar (with Rawlins, 1889), Christian Upsticism (1899) Faith and Knowledge (1904), Studies of English Mystics (1906), Truth and Falsehood in Religion (1906), Faith (1909), Speculum Anima (1911) Types of Chris-Speculum Anima (1911) Types of Christon Santliness (1915). The Philosophy of Plotinus (1918). Outspoken Essays—(first series, 1919), (second series, 1922), The Victorian Age (1922), Personal Religion and the Life of Decolion (1921), The Platone Tradition (1926), Lay Thoughts of a Decoline (1926). The Chieffen De World Platone Tradition (1926), Lay Thoughts of a Dean (1926), The Church in the World (1927), Christian Ethics and Modern Prob-lems (1930), God and the Astronomers (1933), A Rustic Moralist (1937), A Pacifist in Triuble (1939), The Fall of the Idols (1940), Mysticism in Religion (1947), The End of an Age and other Essays (1918). An excellent selection from his works is Wil and Wisdom of Dean force by the Iones Marchant (1937). Inge, by Sir James Marchant, 1927.

Ingelheim, two small mrkt. tns. of Germany adjoining each other in the Rhineland-Palatinate, formerly republic of Hesse-Darmstadt, about 8 m. W. of Mainz. At

one time they were celebrated for the palace of Charles the Great. Pops. 5100 and 1100.

ingelmunster, tn. of Belgium in W. Flanders, situated 7 m. N. of Courtrai, on the canal from the R. Lys to Roeselare, with manufs, of carpets, linen, lace, velvet,

and salt. Pop. 9000.

Ingelow, Jean (1820-97), Eng. novelist and poetess, b. in Boston, Lincolnshire, She pub. her first poems, A Rhyming Chronicle of Incidents and Feelings (1850), anonymously. Her poems are characterised by their novelty and churm, and her novels also are worthy of attention. Among her works are Poems (1863), which contained 'The High Tide on the Coast of Lincolnshire, 1571,' one of her best; 'A Story of Doom' (1867), 'Deborah's Book and the Lonely Rock' (1867), 'The Grandmother's Shoe' (1867). Among her words are: Moosa the Fairy (1869), anonymously. Her poems are character-Grandmother's Shoe' (1867). Among her novels are: Mopsa the Farry (1869), Off the Skillus (1872). Faled to be Free (1875), Don John (1876). See Some Recoltections of Jean Ingelow and her Early Friends (London), 1901.

Ingenohl, Friedrich von (1857-1933), Ger. admiral, a great favourite of the Kaiser Wilhelm II., whose yacht he once commanded. He was commander-in-chief of the China station previous to his appointment to the Supreme Command of the Ger. High Sea fleet in 1913. He was still in com-mand on the outbreak of the First World War. His policy of raiding with cruisers such as at the Dogger Bank (q.v.) was not approved owing to its costliness, and in consequence he was placed on the retired list, being succeeded by Adm. von Scheer, Ingersoll, Robert Green (1833-99), Amer.

lecturer and lawyer, b. at Dresden, New York, the son of a Congregational minister. He practised law in Illinois, and in 1857 went to Peoria. In 1862 he became a colonel in a cavalry regiment, and not long after was made attorney-general of Illmos. He became known by reason of Himos. He became known by reason of his lectures directed principally against Christianity. Among his writings are: The Gods and other Lectures (1876), Some Mislakes of Worses (1879), Great Spicches (1887). See E. G. Smith, The Life and Tomorseeness of Robert G. Ingersoll, 1904. Ingersoll, in of Oxford co., Ontario, Canada, It stands on the Canadam Network and Canadam Death.

National and Canadian Pacific Railways, and on the Thames R. It manufs, agric, implements and furniture. Cheese, but-ter, and grain are produced in the dist., and there are flour and planing mills. Pop. 5900.

Inghirami, Tommaso (surnamed Fedra from his success as Phadra in Seneca's Hypolytus) (1470-1516), poet, crator, and humanist of an it, noble family. Seven of his Lat, crations were pub, at Rome in 1777, and Erismus says he was called the Cicero of his age.' Julius II. made him keeper of the Vatigan library. He left Mss. of a Commentary on Horace's 'Ars Poelica,' and Abstract of Roman History

Ingleborough, hill in the W. Riding of Yorkshire, England, about 17 m. S.E. of Kendal. On the S. is Ingleborough Cave At | containing stalagmites and stalactites, and

old camp Alt 237, 11 Ingleford, see HUNCLILOID

Ingleton, vil of the W Riding of York shine I nigland situated on the Grett about 10 in NW of Settle In the vienity are situated limestene caves Pop 2500

Inglis, Charles (1754-1816) Anglicon bishop b in New York Hewa clevilit during the War of Independence and went to Halifax when the Ing evaluated New York Conscitate I in 178 first bishop of Nova Scotic he was thus the first I ng colon il bi hop

colon 1 bi hop
Inghs, Elsie Maud (1864-1917) Settish
woman urgeen b it Num 1 d India
second daughter of J hin 1 ibe David 1
Indian (1841-8) vice Stespent 1 ut ei
her childhood in Jarria i Qualified
1892 term urgen 1 linburgh 13
pital for Women and Children On th
outbreak of the First Wall War fermed
Scottesh Women 5 Havid k 1 by Sethi Scottish Women's Ho talks. In scibir 1915 she helted to all he tythall was captured with wombel at Kimb vatz On her illis letturel hor in liter (1)16) vent by Arhumel to be milita with hop * 1 tiff to it nit th 311 1 5 Shi Div

Ingoldsby, Thomas, BATHAM IN H

ingolstadt fittil I in of Bivilli () many standing of the Lab of the Danib old castle and was funous trate univ founded in 14.2 where narry great scholars were student. I p. 00

Scholls were student in 00 Ingot, cist miss of relation in in able especially relatings of all essential terms of a literature of the silver masses of a literature of the silver of the other forms. An mant mould is a flask in which met il is east it to blooks.

Ingram, Arthur Foley Winnington-, (

WENTINGTON INCLASE

Ingram, John Kells (182 1907) 1111 author and economic region profess of Gk at Irmity College Dublin in 1866 and vice provost in 1818. His Publical Leen cong. contributed to the Line Line was published with the contribution of the contributio other works are History of Slacery and all work of some later writer and merely a Serfdom (1888) Outlines of the History of Latery and a Work of Son Later writer and merely a Serfdom (1900) Human Valure and Winals (P. H. stiria Croylana 1894 according 1884) (1901) Serf W. C. Silk (1901) Serf W. C. lectigion (1900) Human variations of mass according to 1 (*) to (1901) I ratheal according to 1 (*) to (1901) I ratheal (*) to (1901) and I raid I ransition (1905) (*) to (1904) and (1904

Prix In 1806 he proceeded to Rome where he studied and worked until 1820 leaving in that year for Horeico Hero the stay of four or fly years and then rejith held of a higher person) is rigidly inturned to Paris. While in Italy he had plied so as to exclude a prospective hen or carefully studied Raphael, and he brought possible heir from any rights in the

on the top of the hill are the remains of an | the latter's influence to bear upon David's teaching. He again visited Pome and finally returned to Paris in 1811, having been in elegiand officer of the Legion of Honour Among his pictures are low of Louis VIII! Apothe Honer! Strutonice! Odipo uis XIII' Apetheosis of Strutonice' O dipus and the Splink The Odah que



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I fallis victiful eleberration traofdeson militerants of his Schres by R. Filze 1880, O 1 1906 H. Fryanze 1911 f Flum 1921 H. Gaber 1927 1 111 111 Houth to 1128 Incubb 12 3 4 5 111

In alph (d. 110)) abbyt of Crowland in In his in honom inferred on him with of Normany who escretive he lift yroughly byen. He had before this A tel the Holy I and on a piliping and on his return had joined a mora try in N ru and a Holy I had been to the Historia M mass in Crop Let which there is a transfer to the first of the first o

As an underendente be produced the sure hance in 1 structed in Porth As an underendente be produced the sure that African to 1 for Memory of the Died on 11 hr tears to 1 for Speak of Surely tright? (1845) a point adopted as the inflicing Sec. (1) Inheritance, in law ferm restricted to Faukiner, Memory John Kells Ingram 1907 Sir R. Paletave Dictionary of the extension to the property in the Political Leonomy (App. 1908) Inflicing the Committee of the Chemical Leonomy (App. 1908) In 1806 he became a pupil of Divid, and in 1801 was successful in obtaining the Grand

Piny In 1806 he proceeded to Rome to redestate and any title or dignity and mined exclusively to the person who prior to 1925, it is entitled on an intesticy to redestate and any title or dignity and herdcoms passing will the estate, (2) the maxim Nemo est here extentis (no one is

property until the death of the ancestor. As a corollary of (1), it is to be observed that a person named in a will of realty is by Eng. law a derisee and not an heir; in Rom. law the term 'heir' applied indis-eriminately to all who, being in the power criminately to all who, being in the power of the head of the family, had a natural claim on his property, irrespective of whether they took under a testament or on intestacy. To exclude effectually his own heirs, the testator had to do so by name in the will. But it was essential to institute an heir of some kind, for a Rom. testament was of no effect unless there was such a person to succeed to the persona of the testator, i.e. to continue his legal existence after death. Later, excluded children were given the right to impugn the will if omitted in it, and recover a certain share of the property. Eng. law the fundamental difference in the canons of descent to real property from the Rom, and systems founded on the civil law is that the rule of primogeniture has prevailed from remote feudal times until the Administration of Estates Act, 1925. The old rules of descent to free-holds of I. were these: (1) Descent is trued from the last 'purchaser' (a technical term meaning the person who last took in any other way than by descent); (2) descent is to the lineal issue in infinitum; (3) males are preferred females : primogeniture determines the male entitled, but females succeed equally as co-parceners (q.r.). (1) Remoter lineal issue 'representing' their own parents (who would if not deceased have suc-(eeded to the property) take per stirpes, i.e. as opposed to taking per capita or in their own right. (a) the nearest ancestor takes on failure of lineal issue. The rules of intestate succession are now uniform for both real and personal property, SUCCESSION, INTESTALL See also GAVEL-KIND, BOROUGH-ENGLISH.

Inhibition, used in a technical sense of

the sentence passed upon a clergyman, by which he is prevented from the exercise of his eccles, functions. It can therefore he used as a weapon for enforcing the laws of the church, also a will to prevent a judge from proceeding further in a case.

in psychology, the word used for a subconscious urge to express the personality in some way which the conscious mind

Inia (Inia geoffrensis), toothed fresh-water dolphin, found in the lakes near the Cordilleras and in some of the upper tribs. of the Amazon, where it is regarded with superstition by the Indians. It is about 8 ft. in length, has a long cylindrical snout with stiff hairs, and only the merest rudi-ment of a dorsal fin. It is generally found in troops of three or four and is hunted on account of the oil it yields. It feeds chiefly on fish.

inisfail, see [NYISFAIL.

Inishkeel, is, of freland, belonging to co. Donegal, and situated in Gwecharra Bay,

with a capacious harbour.

Inishmacsaint, par. of Ircland on the
Erne, parily in co. Donegal and partly in
Fermanagh. It is named from an abbey Fermanach. It is named from an abbey in the times of auct. Rome in the question founded by St. Nenn in the sixth century. literally asked of the people, 'Jubetiane?'

Inishmore, is. of Iroland, situated at the mouth of Galway Bay. It is 9 m. in longth and 21 m. in broadth, possessing two natural harbours on the N. coast.

Initial, first letter of a word, especially of a name. Ornamentally arranged, they are a feature of Irish (see KELLS, BOOK OF), and Carolingian book decoration, often of full page size and rich in colour. In the text of the Incunabula (q.o.) they were usually inserted by hand, later with woodcuts (e.g. Holbein's Danre of Death) or copper engraving, fitted to the typographic style. See also ('APITAL: ADBRIVATIONS.

Initials. In some cases signature by 1. constitutes a good signature in law. Section 12 of the Civil Procedure Act, 1883. provided that in all actions upon written instruments it should be sufficient to designate any of the parties by their initials, but the section is now obsolete. There are decisions to the effect that sig-nature by I. is allowable in the case of memoranda and agreements comprised under the Statute of Frauds (see Fravos, Staturn or). By the Wills Act, 1837, a will or codicil may be validly signed by I. only. Probably there are no documents which in the eye of the law must be signed in full, although it is clearly unwise from the point of view of identification not to do so. A deed certainly requires no signature, the traditional essentials of every deed being no more than scaling and delivery. In Scots law Lalso constitute a good signature of a deed, but the genuineness of the l. must be proved.

Initiative, in legislation it is a common-

place of political science that very few constitutions are really so framed as to ensure the representation of the views of the unjority of the electorate upon any one particular issue. Some deny that a representative chamber like the Eng. House of Commons is returned for the purpose of effect unting the will of the majority upon every single issue, on the ground that legislative authority and ounipotence rest with Parliament and not with the electorate, and it is further asserted that any relation of agency as may subsist between the electorate and its repre-sentatives subsists only so for as the latter can be said to be entrusted with a mandate for carrying out a general party policy. Sir A. Dicey points out that it is inconsistent with the legal notion of Eng. parl, sovereignty to suppose that parl, electors have any legal means of initiating, sanctioning, or repealing the legislation of Parliament, because the opinion of the electorate can only be expressed through Parliament. Not that this view of the functions of the electorate is by any means essential to a representative polity, for in Switzerland all parl, deliberation is regarded as purely preliminary, and by the process of the Obligatory Referendum of legislative proposals, a legislative necessary over after being passed by the Federal Assembly, must on the demand of a certain number of citizens be submitted to the electors for formal approval before it can become law. This, indeed, was done

Some of the Swiss cantonal constitutions go even further than this by the device of the right of I This right makes it incumbent on the legislature to pub proposals advocated by a cert un proportion of the electorate, and cause them to be voted on at the local polling stations. It must be conceded that the I ensures the literal observance of the will of the majority but it is questionable whether it is a sound at luge the actual business of live making political expedient to cost on the people Practised politicisms unist almost of necessity be better able to formulate the general aims of the majority in detailed proposals than the people themselves Moreover, the people he soft to be so blinded by prejudice of a fit passion as to be meapable of weighing up all find can be said for and against a proposed law and ecitually it must hanger indefinitely the work of legislation in every important amendment suggested at investig of a Bill has to be referred to the elector de for approval Sidgwick inspired by Ben tham advances the macrious solution of making a member selection unrully to new thic with a view to deferring the final ratification of the legislative measures of the vert until the election so that in l the intermethe people ay haye an op portunity for cancelling any unpopular legal taxe innoverent lor real dr. r sion of the question of the control of the people over gov see H. Silkwick. He ments of Politics 1891, ch. xxvii.

Injection, act of infreducing visibs a common one of other eff the crivities of the body of the substance is generally comploved as in agneous solution on the reactive effect by due the fection on the reactive fection on the substance of the substance onto the substance onto the substance on the substance on the substance on the substance of the substance

Injector, apparitus for foreme water into a boild urinst the pressure of the steam. M. Henri toffaid invented an I. in 1538 which is now in sen ratuse ste un from the boiler passes into a come il pipe the size of the opening of which can be regulated by an adjutable conc. As the steam rushes out of this it meets the feed water, and is condensed, so are it my a par tial vacuum, which causes the water to rush in with a very great velocity and to pass down mother conical pipe. The corping steam behind helps to drive it As it emerges from the down this pipe narrow end of this comeal pipe it passes into the narrow and of another one as it passes on down this expanding cone, its velocity slackens and the pressure in creases so the water is forced into the boiler through a non return valve. This I. may be worked either by exhaust steam

Injunction, in Eng. law, a remedy given as a rule by a court of equity (qv) to restrain one or more of the parties in an action from doing or allowing their agents or servants to do an act which the court holds to be inequitable in regard to the rights of the other party. The I was one of the modes by which the chanc llor built up his whole quity juri diction (see CHAN CHIOR CHANCIPE, IQUITY). By the By this we you the equity courts could overide the common law whenever the latter was m conflict with the dictates of good con in the form of a prohibition command me the Huntin not to go on with his action it come near on pain of nuprisonment for contempt of court if he disobeved (t) 1 (1) into locators or preliminary, or (b final or perpetual. An interlocators 1. (b final or perpetual 15 at all on merely prin a facil evidence, and fither repose of perenting further deserte to the plantiff rending the ultimated isom of the district its usually only stint don't be plantiff giving in unlest saigtopry damages if he does not suit the trial in misking good his (1 at I mill or perpetual ls is the name d finitely settle the right of ho 11 11 1 1111 5 the command a person to forben from long on the Luthmandatory I is one of the coping a positive att, eg to pull d vn a biplding creeted in contravention of the rights of mother. But even in I when it negative in form new laye in with the general morner and a new and must be positive effect e.g. and the strain may A from performing in big who of his at than B will usually have the effect of it has a faithful his contract of the them be entry of employment. Is may be granted to be true the continued or the street information described in security of in-his linuries to Property, Malicious, se Mainty

Ink, instern a used for producing records of a creation and similar substances. Tho carb streaments appear to have been prepared by suspending some carb account to the such as social at the secretion of the cuttle fish or spir was used. In the diddle Ages there has to me more use in a composed of a decretion of gall must or their tonian wilding substance, maked will in non-salt. The account of these depended upon the form atom of a blinshous time which on extintion (that is, explained with a consistence of the analymic converted into a ble k substance. The modern is bine ble kink' consists a nitially of the same in the intervals. But a ferrous salt is used, and the development of the black colour only takes place after a horter or longer exposure to the air. In old, it that the writting may be visible before oxidation a lourn matter (at ally some indiged derivitive) is added. This causes the blue

nation and of this coment pipe it passes derivitive) is added. This causes the film into the narrow and of another one so, as it passes on down this expanding cone, its velocity stacking and the pressure in the preparation of smalls, either China or crosses. So the water is forced into the boiler through a non-return valve. This Limay is worked either by exhaust stem advents extract a solution of ferrous sulform the engineer by steam from the boiler.

At first a clear solution of a dark blue tion of an Iron salt becomes dark colour is obtained, but from this there solution of a cobalt silt be used for y gradually separates a black insoluble procipitate. In order to keep this in suspen on which the writing has been in sion gum arabic or some other vicid material is added. The I sooks into the paper and is there oxidised, but the prosence of the gum gives to the writing a shiny appearance. In order to avoid suppone and present the corder to what this certain Is at made by issing index suppone and (prepared by dissolving induso in strong sulphum and) to which is added metally non I crious sulphite is thus formed and when the excess of acid is no tradised by me ins of chall, the clear supernatint liquid obtained on allowing the mixture to stand, yields on mixing with a timin solution a cleu fielly flowing 1. Certual conditions require to be fulfilled before an 1 cm be described is satisfactory. It should be non corrosive, non pot-onous, permanent, not easily crised and non-termentable The last requirement is usually fulfilled by the addition of some antiscritic such as phenol or thymol

Int - These Col nired aqueous solutions of the soluble coul tar Thus solutions of the cosms and colouis. thodan mes give ted is brilliant green ind indigo preparations etc. he used for the maint of rece at 1 blue Is are used respectively butther the firs made from Prussian blu li lved in oxide acid so cilled sold ind silver is the obtained by mixing the finely divided met ds or their substitutes with runt and a solution of a soluble silicite. The initial colons of the ink is usually strengthened by the addition of blic infine dyes but these have not the permanence of the iron compounds But mis for temporary pur poses can be made by simply dissolving

such dves in water

Copying Ints are noted by the addition of electric, gum of dixtrictory concentrated soluble tyning I Addition of the c materials greatly act it is the oxidation of the tannate of non-by-tuning a film over the surface of the writing. This dissolves

when the damp tissue, per is applied and an impression is threely obtained Printer's Ink. usually consists of a variash like material made from resur, soop, and a drying oil in which is suspended a olouring matter. For black a mixture of lamp-black and in ligo (the latter in small amount) 1 used. Reds, latter in small amount) i used. Reds, blues and yellows are obtained by me inof eumine, Prusslan blue, and lead chromate, respectively Other colours may be prepared by suitable mixtures of

Marking Inks nearly always contain some silver salt as a basis. A solution of the salt mixed with gum give in contact with organic matter, such as cotton or linen, a tim which on exposure to light or heat or both gradually become black. The stain is indelible, but in come of time fades to a brownish colour.

Sympathetic Inks are those which be come visible only after suitable treatment. Thus a solution of gails may be used for writing. Thereby is produced a writing which on washing over with a weak solu

solution of a cobalt salt be used for writing no characters are visible until the paper on which the writing has been made is warmed. The chaineters then appear blue, such inks are of no practical use, but figure as of import inco in fiction.

Inkerman, vil in the (in ex, lying Lof Schastopol Here on Nov.), 1891, the Ing met the Russians it buttle, and after a brive resistance, and when defeat seemed immunent, were reinforced by tho ind guiled the victory There are and cave dwellings at I and it is a noted

place of pilgramage

Inlaid Linoleum, see under Linoi i M Inland Revenue, Board of, had its begin ming when Commissioners of Strangs were appointed in 1691 in the icim of Wm of Oringe I wenty five years litter in 1/19, Commissioners of laxes were appointed These commissioners worked independ ently of cult other until 1534, when a Consolidated Board of Stamps and Taxes wis estab. The next big change took placem 1819 when the Commissioners of I xere were absorbed by the Board which now idepted its present title. In 1908 however, all matters connected with Ex-cise were transferred to the Board of Cus-In 1905, toms the three sources of Inland
Leving test preciat Death Dutas,
Stand and Lixes Silvines and expense of the board for 1416 ware
4.16 fm (2) The Chairman in pand
4.00 per union and deputy chairman 5 (1) The series of the Louid is at some a to House Strand London W. (S. C., LNCL) AND CUSIONS DUIDS,

INCOLETY INTELLED INVITORY Inland Son, set of Jupin Situated be tween the mun is on the N and the is of Shill I and Kinshi a en the S mout 210 m in length and its greatest brothers 10 m. Its shore accepte ally be initial, and the water are very calm Inland Water Navigation, see under

Inlaying, method of ornuncating that surf is by the inserting in one material a substance differing therefrom in coloni or nature. Thus the basis may be of w. In tal or stone and inland or en-crust I material of different wood or of muble tottorseshell precions etc. The art of I is practised in metal etc the ribinestion of furniture and artisfic objects of various kinds. I in wood is sent ally known as managerity (g), in metals it is termed dimiscening (q t) and in murble and precious stones it forms a vinety of 'mosaic' (q t) work The word I is, however generally under stood to be limited to the first of those three. It consists in the fitting together, to form patterns, of differently coloured pieces of wood. In the Stuart period a good deal of I was executed in England upon cabinet, the ts of drawers, etc. In It dy the most beautiful examples of the art are on) incls or chon stalls, and in Germany, musical instruments, chand cabinets are often lavishly inlaid

Inman, Henry (1801-16), Amer attist, at I tica, New York, studied under Jarvis Distinguished principally for his portraits of Amer. and Eng. statesmen and | men of letters.

Inn, riv. in Austria, one of the chief affluents of the Danube. It rises in the Engadine, Switzerland, and flows through the Tyrol and Bavaria, its total course being estimated at about 310 m. In-sbruck is on its banks.

Innate Ideas in the philosophy of Descurtes are the clear axiomatic principles whose certainty cannot be doubted. They are not only certain, but universal, and as they are not the result of empirical oxperience, they may be regarded as the primitive germs of or the irreducible infinium of truth, which nature has planted in the human intellect, and which, obscured in part by errors due to bodily conditions, the mind would find clearly within itself if it were freed from disturbing influences. Hobbes describes this kind of reasoning as merely metaphorical, and considers that there is no criterion for distinguishing this assumed clearness; to which objection Descartes replies that there is a distinction between a natural inclination to believe a thing which may nevertheless be false and a natural light which makes as know a thing to be true; which reasoning to a slice on to be super-added metaphor. Descrites, eschewing all talse reasons, applied his principles to the study of mathematics, and made remarkable progress therein: but the study of mathematics is one which peculiarly blends itself to incchancal application. In the study of the relation of mind to body. Descartes was not prepared to earry out his conception to its final consequences; since to do so would be to deny altogether the influence of the will upon our actions: the limit are of the will upon our actions; the command and in versions can be the formulated a theory that the Albert. Legend fells that if was on this mind can and may interfere in reflex stone that Jacob fell asleep when he actions, but that the mind possesses the dream of the flight of stairs reaching to power or pure thought in its own right. Locke, as a typically Brit, practical philosopher, denies the existence of L. L., and magnetion's stone at Taria.

This killing Fusiliers. The Boyal. Raised. asserts that all our knowledge comes from sense experience, the mind being only tabula rasa. Leibniz opposed this whole conception of inages impressing them-selves upon the blank mind from external objects as the basis of all our knowledge, ' though he agrees with Locke that, in the 1715 Rebellion in Sco-land, and at point of time, sensations precede the relating activities of the mind. Locke the practically ignores the reaction of the mind itself in knowledge; Leibniz decrus campaigns before going to India for the Wille we may admit that all truths come to will be reacted the processing the first World War it while we may admit that all truths come to one knowledge only through experience. to our knowledge only through experience, there may still be certain truths which may properly be called innate. In other words, the vague concept 'experience' demands a closer, more subtle definition than Locke gave it, and this was supplied by later philosophers like Humo and Kant. Locke's criticism of I. I. has, indeed, no force against the theories of Ger. idealism ; for, according to Kant, experience itself would be impossible unless it were possible for the mind to pass indements trans-cending experience. With Kant, perception does not conform to the nature of objects, but the sensible object conforms to the constitution of our faculty of per- faction.

ception. Eng. philosophical thought is essentially utilitarian, and therefore opposed to the theory of a priori and innate truths—an attitude which explains the popularity in England, for a time, of the positivism of Cante or any other system of philosophy which seems to favour pro-gress irrespective of the forces of tradition.

Inner House, see COURT OF SESSION. Inner House, see COERT OF SESSION.
Innerleithen par, and th. of Peebles and Selkirk, Scotland. The par, has an acreage of 23,324, and is intersected by the Leithen Water. There is a medicinal spring containing sodium and calcium stabilities. chlorides. It is one of the centres of the

chlorides. It is one of the centres of the Scottish woollen industry. Pop. 2300.

Innes, James Diekson (1887-1914), Eng. landscape painter b. at Llanelly in Carmarthen, of Catalan descent on his mother's side. He studied art at the Slade School, and exhibited chiefly at the New English Art (Inb. His earlier landscapes were painted in South Wales, and his later on the Mediteranean stones of his later on the Mediterranean slopes of the Pyrences. His ability and originality exercised a strong influence on the work of his younger contemporaries.

Inner Temple, see 1885 OF COURT. Inness, George (1825 91), Amer. landmness, George (182) 91), Amer. landscape painter, generally regarded as the greatest; b. at Newburg, New York; studed in America, but travelled in Finone. Among his works are: 'Autumn Gold' 'I nder the Greenwood,' 'Passing Stoum,' Moonrace.

Innistal, used in poetry as a synonym for Ireland, and means 'the island of the Lol.' The 'Fall' or 'Loa-lai' is the stone which, since 1296, when Edward L-carred it off from Scone, has rested under the coronation, chair in Westininster the coronation chair in Westminster Above. Legend fells that if was on this stone that Jacob fell asleep when he dre unt of the flight of stairs reaching to

Inniskilling Fusiliers, The Royal. Raised in 1990 from the forces which lefended Ennekillen for Win, III. The best and second battallons were respectively the 27th and 108th regiments of Foot. The regiment tought at the Boyne and Siege of Limerick, Gallipoli, Egypt, and Palestine. After the war it was reduced to one battalion, and linked with the Royal Irish Fusiliers (q.r.) to form one corps.

Innocent, the name of thirteen popes :-Innocent I. (402-117), native of Albano. He upheld firmly the authority of the Rom. see, both in the W. and in the E., and was strenuous in enforcing the celib-

mey of the clerry. He was canonised.

Innocent II. (Gi.gorio Papareschi)
(11.30-13) was elected on the death of
Honorius II. He had, however, to flee from Rome on sev. occasions owing to Anacletus having been elected by a rival Innocent III. (Lolario de Conte) (c.1160-1216) succeeded Celestine III., and under him the power of Rome reached its greatest height. He everysed his papal juris-diction (1198-1216) over the kings of France and Spain, and compelled King John of England to receive Stephen Langton as archbishop of Canterbury. See ton as sectionally of Chiceroury. See A. Luchaue, Innocat III., la papatté et l'empire, 1906; C. H. Piric Gordon, Innocent the Great, 1907; L. E. Binns, Innocent III. (Sinnibaldo I washo) (1242)

54), b at Genou. He was compelled to leave Rome on account of the quarrel which was being waged between himself

and Frederick II.
Innocent V. (1245 77) b at Tarentaise, was pope for five months in 1276, and was a native of Savoy and the suc

cessor of Gregory A.

Innocent I (Etienne tubert, 13)2-62) Frenchman, b. at Monts, in Lamousin, the successor of Clement VI - He brought about a number of reforms in the pipal administration, and did a great deal for its benefit.

Innocent VII (Cosmo der Vigliorati) (1404/06), some writers have given a favourable account of him, but most ogree

that he was guilty of repotsin

Innocut VIII (Grownin Battista
Cibo) (1484-92) b at Genoa in 1432 In

a bill of 1484, he instigated very severe ares against witches in Germany, the principles environed by him being, later, emboded in the Mallens male fr earum (1157)

Innocent IA (Grovanus Antonio Lachinetti) was elected pope in 1591 and died

just after.

Innovent X (Georgian Lattista Pamfili) (1614-55), b. at Rome in 1571 did something towards ictorin, and was entirely

opposed to Jansenism
Innocent XI (Binedetto Odescolchi)
(1670-59), b. at Como in 1611 He was a zealous reformer, and most of his time was taken up with the quarrel against Louis XIV, who laid claim to the right of the king to appoint to benefice. This led to the Declaration of Gallican Liberties

Innocent XII. (1ntono Pignatello) (1691-1700). b. at Naples in 1615, made peace between France and the Papacy Innocent XIII. (Michelangelo der Confi)

(1721-21) was under the sway of spain and

Liance

Innocents' Day. This is the ling name for the festival which is celebrated 25 Dec , in commemoration of the massacre of the children of Bethlehem by Herod. It was probably first celebrated towards the end of the fifth or early part of the sixth century. In the Lit (hurch it is known as the Feast of Holy Innocents, Mass being and in purple vestments, probably because the innocents did not enter heaven till Christ at His Ascension opened it to those who believe. In the Gk. Church, the feast is celebrated on Dec. 29, being known as the Feast of the 11,000 Holy Children. Also known as Childermas.

Inns and Innkeepers. An inn may be defined as a place which supplies lodging,

accommodation, and food for passengers, travellers, and wavinters. It is immaterial whether the place is called an inn, coffee-house, or by any other name, if in fact it is an um. An um is to be dis-tinguished from a tavern, the latter being stratis an alchouse and victualling house combined, but primarily and essentially a place where liquor is sold. The sale of liquor is not the characteristic of an inn, and there are great numbers of places in Britain which are mins although they have no beence to sell intoxicints The propractor of a tavern is under no obligation to supply even a triveller with refresh ment, and indeed no one has a right to majet on being served in either a tavern or alchouse but it is an inductable offence, and also actionable for an unnkceper to refuse to supply accommodation and victual at any hour of the day or night to a traveller who is ready to a 1y and who conducts himself properly—but the innkciper may refuse it he has not room, or if the traveller or intending guest is an objectionable person, such as a thick, prostitute of person suffering from contigious disease. An inukciper is only bound to receive and lodge a guest so long as the suest retains his character as such Merely purchasing temporary refreshretushment of putting up a near schoreces enon th to make a main a ruest M com mon liw the highly of unkeepers was so wide that a girst could recover tor loss or darrige to his property in almost all cases where the mirkeeper was unabio to prove that the loss was due to the guest's det uilt But by the Innkeepers Laability Act, 1865 (Section 1) on amkeeper is not hable to pay more than 450 for loss or mmry to articles or property brought by guest unless the property (1) is a horse or other live animal, or a currage and genr, (2) was stolen, lost, or injured through the wilt il act, default, or neglect either of the makeeper or his servints, (3) was expressly deposited with him for safe cus tody To obtain the benefit of the Act an makeeper must put up in some con-spictions part of the cuti mee half of the inn a copy of Section 1 of the Act guest refuses to pay his bill the innkeeper has a hen on his in gage or other articles brought to the major the guest, whether such anticles are the property of the guest or not. Hence a commercial traveller's stock in trade can be served. If the bill bo not paid in six weeks, the unkceper has, by in Act of 1878, the right, after ad-yertising in a London and local nowspaper hi n tention, at the end of that time to sell the articles and repay any surplus to the defaulting guest. See C. C. Ross, I'm Itelating to Innherpers, 1928, and R. Watson, I Scrapbool of Duns, 1949.

Innsbruck, cap. of the mov. of Tyrol in Austria, It is named from the chief bridge over the Inn, on whose r. b. it hes. The situation is a splendid one, for the broad valley from which the city rises is guarded on all sides by lofty heights. Here the high roads from Bregenz in the Votarlborg and from Germany on to Italy over the Brenner Pass cross one another, a fact which accounts for its strategic import-

The interest of the tn. is mainly archeological. The cenotuph of the Emperor Maximilian 1. (d. 1519), which, with its marble sarcophagus and twenty-eight bronze mourners, is one of the finest illustrations of sixteenth-century sculpture, is in the Franciscan church (1509-93). There is also a univ. (originally founded in 1677), having 195 teachers and 1567 students. It also possesses a good library with 300,000 vols., and the Landhaus o the Diet is here. Pop. 62,000.

Inns of Court. There are four I. of C.,

Inns of Court. There are four I, of C., Gray's, Lincoln's, Middle, and Inner Temple. To become a member of the Eng. bar it is necessary, hesides passing certain examinations in law, to be ad-mitted as a nember of and to keep twelve terms (extending over a period of three years) at an I, of C. The I, of C, are a kind of legal univ. of London, in which the barristers and students correspond respectively to graduates and undergraduates. There were formally a number of small inns, such as New Inn, Staple Inn, and Clifford's Inn, all of these have cuber been bought up or in some other way acquired by the four remaining Loft'. With the dissolution of the ergeants' must disthe dissolution of the rieants' unis disappeared the anctisatus of 'serieants' commemorated in the humorous characters of Sericants Buziuz and Snubbin in the Pickirck Papers. All the existing I, of C, are corporate bodies owning (prior to the First World War) valuable property, and appointing from time to time ben-chess, out of their own members to form out of their own members to form chers. the executive bodies of the societies. Twenty benchers, five from each line, coopted from time to time, form the Council of Legal Education. The beuchers now disbar a barrister for professional or other serious unsconduct. Intending equity and chancery practitioners usually join Lincoln's lim, the two Temple Inns being the best for common law business. Grav's Inn apparently offers the best scope for Inn apparently olicis the best scope for scholarships and students' prizes. A time-honoured feature of the L. of C is the keeping terms, not by residence or attend-ance at lectures, but by 'eating dinners' in the halls, the total number being six of each term; but there are certain exemptions; studentship and first class honours men gaining a remision of two terms, and univ. men need only dine on three nights each term. See also LICAL EDUCATION.

Disastrous damage was done to property in the 1, of C. by Ger, air raids on London (1940-41). Large portions of Gray's 1nu were completely destroyed. The fumous Hall of the Middle Temple and the libraries of both the Middle and Inner Temple were gravely damaged; while large blocks of chambers were com-

close of the Stuart Period, 1924; E. Williams, Early Holborn in the Legal Ouerter of London, 1927; W. Kent, Lost Treasures of London, 1947.

Innusado, in the language of pleading in an action of libel or slander, means a para-graph in a statement of claim which seeks to put on the words complained of a more defamatory meaning than is warranted by natural construction. The defendant may traverse or deny the 1., and yet pay money into court by way of amends. But he must then make it clear that the money is paid in by way of reparation for the words in their natural meaning, and not in that alleged by the plaintiff.

Innuit, see Eskiyo.

Innycotta, see HINGANGHAT.

Inoculation, communication of disease accidentally or intentionally to a healthy subject by the introduction of certain products of disease into the body through the skin or the mucous membrane. The chief discuses so transmitted in man are anthrax, hydrophobia, smallpox, and syphilis. Before Jenner introduced vaccination (q.r.), I. of smallpox was practised. The disease as thus transmitted was far less dangerous than the ordinary smallpox, and, further, rendered the inoculated subject much less liable to a future attack. Its disadvantages are obvious, in that it tended to keep the disease alive, and further to increase its spread, but it was my duable to those who had been incomlated, and was of great service prior to Jounce's discovery. In 1840 the practice of I with smal.pox was forbidden by law. Pistem's treatment for hydrophobia and all seriou injections are based on a similar principle to that explained above. Inone, Ismet (b. 1881). Turkish states-

man, original name Ismet, one of many children, of a proy, family of F. Anatolia. After a harsh youth, passed into the Cadet torps Politically suspect, he was virtually exiled as a second lieutenant in Tupoli. Stayed there for eleven years; then served with much distinction in the short disustrous war against It, a gression. Promoted captain and tought in the first Balkan war. As a major of the General Start he reorganised the Dirdanellos deto not which made it possible for Kemal to not the Brit, attack in 1915. In the First World War, served on all fronts, becolong major-general and a pusha, and as under secretary for war being charged with the demobilisation of a beaten and demonalised and discase-ridden army. After the Gk, attack on Smyrna, he answered Kemal's call for resistance by nething his way in the tags of a peasant private to the conceded headquarters of keinal, who appointed him his Chief of wills large blocks of chambers were completely demolished. The Itound Church that I have a period of unrolleved mistall. After a period of unrolleved mistall. After a period of unrolleved mistall, atroyed. Lincoln's Inn was hit by a fly-1921, the Turks, under I defeated the ing bomb (Aug. 1941). Windows and (Gk. af Inoin's victor) which marked the woodwork of the Gatchouse of 1518 and of 'Old Buildings' sustaining damage.

See S. Ircland. Picturesque Vicurs: an really diplomatic; for as head of the historical account of the Inns of Court, 1800; Turkish delegation to Lausanne, he J. B. Williamson, The History of the achieved a resounding success. I. had Temple, London, from the Institution of the male himself a national hero; Lausanne Order of the Knights of the Temple to the 1924 Kenral made him prime minister and in the ensuing thirteen years he created Turkey's modern administration. The Sp. I. was uppressed by Napoleon in 1808, and key's railways was, perhaps, his out-was finally abolished by the Cortes in 1831, and was finally abolished by the Cortes in 1831, the Execution of the Grand in 1808. Turkey's modern administration. The nationalisation and development of Turkey's railways was, perhaps, his outstanding internal achievement. His foreign policy was based on friendship with Russia, even against the convictions of his passionate chief Kemal. Resigned after the Alexandretta (q.e.) affair, but his restraint brought its reward. After Kemal's death I, was elected his successor without any serious competition (1938), and became known as Inonu. He was re-elected in March, 1913.

Inorganic Chemistry, see under Ch

ISTRY.

Inosite, or Hexahydroxycyclohexane (C_cH_d(OH)), a sweet crystalline substance, melting at 25.3° C, that is found widely distributed in the animal and vegetalde organisms, especially in conifers.

Inowroclaw, see HOHENSALZA.
Inquest, see CORONER.

Inquisition (Fr. inquisition : Lat. inquisitio, a seeking or searching for). ordinary language, particular inquiry, search stimulated by curlosity or hidden motives. In law (1) a indicial investigation, inquiry, examination, an inquest;
(2) the verdict of a petry jury under a
writ of inquiry. 'An inquisition of office
is the act of a jury summoned by the proper officer to inquire of matters relating to the crown, upon evidence laid before them' (Blackstone, Comment, bk. iv., ch. xxiii.). The institution known as the L. was an ercles, tribunal first outlined at the synod of Toulouse in 1229, and estab, by Pope Gregory IX, after the conquest of the Albigenses in 1233. A committee consisting of sey, respectable laymen and the parish priest was ordered to be set up in every parish to search for and bring heretics before the bishops. Soon afterheretics before the bishops. Soon afterwards inquisitors were specially appointed by the Pope from the Dominican and other orders, but these did not supersede the bishops' courts. Persons accused of heresy were examined privately, and if sufficient evidence was found against them they became liable to eccles, penalties. If they remained impenient the severest eccles, penalty, riz. excommunication, was pronounced against them and they were handed over to the civil authority for capital punishment. The cerles, penal-ties ranged from the enjoining of certain good works (e.g. alm-giving) to imprisonment for life. Informer's names were kept secret; torture was resorted to to extract confession, while the death penalty usually took the form of burning. The I. was set up in Italy, Spain and its depen-dencies, Portugal, and France, but not in England, where hereties were tried by the ordinary tribunals. It flourished chiefly ordinary tribunals. It flourished chiefly in Spain, owing to the numbers of Jews and Mohammedans settled there, who, while outwardly conforming to Christianity to avoid persecution, practised their own religion in secret and plotted extensively against the unity and safety of Christendom. According to Peschel's cal-culations about 2000 persons suffered death between 1181-1501 when Isabella warfare were the occasion, rather than the

In France it was used by Philip le Bel for the suppression of the Knights Templars, but soon fell into disuse. In modern times the 1. in Rome is called the Holy Office, and is composed of cardinals, judges, consultors and other officials, under the presi-dency of the Pope, but its activities are confined to the censorship of books and matters relating to church law and eccles. offences. Death was regarded as the penalty for heresy by Catholics and Protestants alike in the sixteenth century, but the Sp. I, has come to be regarded almost as a synonym for religious bigotry coupled with gross inhumanity.

Insanity, ansoundness of mind. It is hardly possible to provide a satisfactory definition of L., as it includes many widely differing states of body and mind, and excludes many forms of aberration which are associated with more or less transient diseases. When any impry is sustained by the cortex of the brain or when poisonous mut-ters are corried to it by the blood stream, clinical experience tells us that a disturbanceof consciousness or curs. The deliting of the fever patient is due to his brain being temporardy poisoned, and a number of cases of more permanent forms of 1, can be traced to definite lesions of the brain. Such conditions are often accompanied by purely physical symptoms, so that the hypothesis that I depends ultimately upon physical causes is not altogether unjustifiable.

CAUSES OF INSANITY. -Mental defect or disease is associated with some inherited or acquired peenharity of brain constitution. If statistics be of any value at all, the relation of 1, to hereditary nervous weakness is well estab. The descendant of insane parents may be normal and even extraordinarily capable, but there is great likeblood of some indications of want of nervous balance showing themselves, and his general condition may be represented as a susceptibility to invasion by the agents that produce mental instability, just as a child of consumptive parents, though apparently healthy, is assumed to be less likely than others to resist invasion by the tubercle bacillus if he allows the conditions to become favourable for its development. Among other general causes of 1, may be mentioned the in-creasing stress of civilised life. There is creasing stress of civilised life. a tear that I. is increasing rapidly among civilised nations, and although statistics do not show that any real increase has taken place, there undoubtedly is a greater tendency to nervous diseases which demonstrates that the nervous mechanism is being over-wrought in a number of cases. The belief that there is a relation between the stress of modern life and the incidence of mental disorder was apparently confirmed by the great increase of mental disorders during the First World War particularly among soldiers. The general body of expert opinion, however, inclines to the view that the conditions of

cause, of the 'war shock' (traumatic neurosis). The report of the Board of Control for 1930 (pub in 1931) comments on the continued increase in lunacy the number of notified means persons under care in Figland and Water showing, in the say years under icview, an average and more ase of about 2000. But the Board found no justification for the suggestion so commonly made the telepace of modern life conduced to month breakdown though present day conditions of urban life might and probably do, tend to in crease the frequency of some minor per ot alcoholism in the curvation of I is divided. So many cases show a fast of alcoholism, and its effects on the nervous system we so promounced that many claim alcohol to be the commonest cause of I On the other hand the cuise may be confused with the effect, the fick of control which makes the confirmed drunk aid is characteristic symptom of an unsound characteristic symptom of an information to the constitution (on-singuints, or mailing of near relations is addited as another cause. Here again, the problem of the first like problem of the prenal hist is feel from I, there is no perfectly trade of the prenal hist is free from I, there is no perfectly trade of the direction of the elements of the problem of the p sons with thist of mental deficiency such persons are often responsible for much larger families than the everage. The immediate cause of I may be toxic poison ing through detective metabolism of through ictual infection by micro organ metabolism or isms such forms at I as follow cert un isms—such forms of 1 as follow certain () whose with brain framin (b) Psycholic is millioner purper detect (c) is with organic brain disease, e.g. syphilitic infection are und ubtedly due then famous (7) Psycholic with ellionic to the presence of foxic substances in the blood. It has been further suggested that worty work motion (to by their faction metabolism induce changes table 1) term Manu Depressive Psycholic is effect on metabolism induce changes in the term Manu Depressive Psycholic is forced which may ultimately cause a classification with dweet formerly physical condition of the brain involving to the condition of the brain involving to the term of the property of the symptoms of the mental he first the very quescipated seasons of hallumations. A delusion of speech and i livit either of the state of the seasons of hallumations. A delusion of speech and i livit eight of he is some great personner of the first.

he is some great personney, or therefore a considerable content of the external lucination is false perception as when a patient sees visions on he is voices which have no foundation in redity. It must be thought that all means persons suffer either from delusions or hadiacina call it a may all be present for time, particularly and definite type. Mental instability at the height of the illness. The curve is usually out to the bodily tions of a definite type in action leading sometimes to sudden the objects are instance and in action leading sometimes to sudden the objects at sucide. In some forms of 1 | Melancholia is the attented by persistent at sucide in some forms of 1 | Melancholia is the attented by persistent at sucide in some forms of 1 | Melancholia is the attented by persistent at sucide in some forms of 1 | Melancholia is the attented by persistent at sucide in some forms of 1 | Melancholia is the attented by persistent at the attention if is ilmost impossible to keep the patients attention for more than a few seconds he is at the mercy of every chance | 11 in ctions and de'n ions (usually hypo impression, on the other hand, some chouldined, self as usidors or person patients cannot be roused out of an object on the motospection. Mamors is often a middle from the point of view of distincted, being either abolished or record treatment is the danger of attinited, being either abolished or re-attited to remote events. Of bodily symptoms the most characteristic is-sleepiesmoss, and the recurrence of the habit of sleep is generally a sign of in-

(1 1551) ic 11101 -There is no universally accepted classification of the types of Instinty, but the following outline of a sum le scheme (Henderson and Gillespie) is similar to that adopted by the Royal C llege of Physicians (Ingland) in its Somenclature of Discases

> iffective reaction types (a) Manie Depressive ... (b) Involutional Mel mchoh î

Scho ophrenic reaction types Paranoiae and Paranoid reaction

fines (a) Phanon, (b) Part pluenn, (c) Part noid states (with c) without hillumations)

L pilepsy Mental D Jiciency (b) Imbecility (a) Idnocy (c) Leeble

r undeducss

Organic reaction types (a) Acute (I) hourn), (b) Chronic tracks of

tolic i deux

Tile) Inceptalitis Meninguis (tuber-cula meningacoccul, etc.) and Abs culn memn-acoccul, etc.) and Abs ces (3) Psychoses with primary degree drye brun changes (1) Psychoses 115 with seneral metabolic deficiency (a) Pel har (b) Mysoedem) (c) Cretmism (1) vehoses with brain training (6) Psy (1) is with organic brain discusses, e.g. liven timonic (7) Psy legic with claonic

of speech and a tivity eight of and a state of causeless clation without any justificible cause either in eact is usually rate and the bodily

Mclancholia is the a tensed by persis tent depression. The pittent is neserable a troverted, solitary and retarded. Had -un ide

Intolutional Mela holio is a term, which in its strictest application is received for a group of cases of both sexes habit of sleep is generally a sign of im itsited for a group of cases of both access provenient. A rapid pulse rate and occurring at the involutional period, who general lack of control of muscles are have never previously suffered from any usually to be found in most types of I. torm of mental illness. Its features are

depression without retardation, anxiety, a feeling of unreality and hypochondriacal and nibilistic delusions.

Paranoia is a chronic form of mental disease which has an insidious onset and is characterised by delusions, which are closely related, unchangeable and bound up together into a system. The term Systematised Delusional Insanity is sometimes given to Paranoia and distinguishes this psychosis from other men-tal diseases in which the delusions are multiple, variable and unsystematised. Delusions may be of grandeur and power or of persecution or jeulousy. When delisions of persecution are present, there is considerable danger of violence as the patient may attack his supposed persecutors or attempt snicide to escape from them. Schrzophrenia is a psychosis which occurs most typically in adolescents and young adults and is characterised by emotional apathy, absorption in phantasy to the exclusion of normal social activities, by delusions and hallu-cinations, and a deterioration in mental efficiency which may termmate in severe dementia. In its typical form it consists in a slow steady deterioration of the entire personality and manifests itself in disorder of feeling, conduct and thought and in an increasing inability to make effective contact with reality. Four varieties have been described: (1) Simple, (2) Hebephrenic, (3) Katatonic, (4) Dementia paranoides. Paraphrenia is a progressive delusional condition, accompanied by hallucinations of various senses and, in due course, by a varying degree of mental deterioration. The condition has been said to lie midway between dementia paranoides and paranoia in the age of onset and the seventy of its symptoms. Heneral Paralysis of the Insune is an inflammatory and degenerative disease of the brain of syphilite causation, which is characterised by progressive mental deterioration and definite physical signs and serological findings. It usually manifests itself from five to twenty years after infection but a few eases have been recorded where the disease made its first appearance thirty or more years after infection. It is commoner in males than in females, develops insidiously and its course is frequently marked by remissions. The carliest signs are usually changes in the patient's personality, (changes in behaviour, character and mood) of which the patient is commonly unaware. There is increasing disorienta-tion, particularly for time and progressive impairment of memory. A feeling of euphoria, coupled with grandiose delu-sions of bixarre type may be present or the patient may exhibit intense depression, even amounting to stupor and inutism. In the depressed type the ideas expressed are frequently absurdly nihilistic and grote-que. In the terminal stage of dementia the patient leads a purely vegetative existence. The disease is world wide and its appailing social significance cannot be overstressed. Syphilis transmitted to the offspring may give rise to invenile general paralysis.

TREATMENT .- Studies of mental disorder carried out in connection with hypnotism led to the attempt to use suggestion, and persistent suggestion still plays a great part in the treatment of mental patients. Progress towards an under-standing of the true character of mental disorder resulted in the realisation that the insane man was a sick man, in need of care and supervision in place of discipline (or as in former times, punishment) and re-straint. A welcome change appears to have taken place in the attitude of the general public towards 'nervous' and mental disease. There is an increased readmess to seek expert advice and treatment carly and the old fear of social stigma appears to be almost climinated. Probably more than any other single factor, the extensive use of psychutry in the three services during the Second World War contributed to this desirable development. For the first time, psychiatry in the Services was fully organised and developed. Special hospitals for the treatment of neurosis and psychosis were estab, both at home and overscas. At home, psychia-trists were attached to the various Military Hospitals, area psychiatrists worked fu-each command, Military Prisons were visited and psychlatric opinion and advice made available at Officer Selection Boards, Intake centres, Courts Martial etc. Oversea-, the work was often carried out in the extreme torward areas. The result was that in the Services large numbers of the Medical profession and an immense crosssection of the general pop, became familiar with the aims, uses, methods, and benchts of psychiatry, and after their return to erviban life they were not slow to take proctical advantage of this knowledge. Further, the experience gained in the organisation of war-psychiatry proved of great value in organising the extension and elaboration of civilian psychiatry which took place after the end of the war. The modern mental hospital provides its inmates with as great a measure of freedom as possible, and with great variety of occupation.

Besides rest and occupational therapy special methods of treatment have recently been introduced, which have yielded valuable results. The methods of treatment now in use include (1) Insulin therapy, (2) Cardinzol therapy, (3) Electric convulsion therapy, (4) Prefrontal lencotomy, (5) Continuous parcosis, and (6) Naro-Analysis. Insulin therapy, which involves the production of a hyporycaemia by means of insulin, has proved especially valuable in schizophrenia, particularly in young patients treated early in the disease. Cardinzol also has yielded good results in certain cases. With electric convulsion therapy the best results have been obtained in depressions, including involutional inclandollis. This treatment, which can be given as an outpatient procedure, is now practised at the psychiatric clinics at most large general inospitals. The operation of prefrontal locuctomy involves the severance of the association paths between the frontal loues and the thalamus. The general aim

of the operation is to modify the dis-ordered behaviour of those psychotic patients whose illuses has been of pro-longed type. Generally speaking the possibility of serious and permittent possibility of strious and perminent damage to the nicutal functions renders it advi able to reserve the method for cases where all other sultable methods have been tried and fuled, where there is no reasonable hore of spont meous recovery and where the juttent is quite incapable of a ctul occur it in or a modest enjoyment of life. Modern practice involve the attempt on the part of the nucleal man to understand his patient, and to han through the discovers of the pur-posise chair ter of he symptoms ob-sessions and delusions the real character of the mucr conflict which they simultane ously express and conced of the psycho-logical teaching of French and his followers There is still a difference of opinion as to whether there is end that break between the neuro es a nerveus disease and the Isycho et ansanty proper or whether the posteriors which are not due to a tual le ion are inerely developments the number According to some mental difference write between the two thank it is stanted for the some that in the call states of dementa. The calles ha 111 (111) depre sive in-mits drigno i is very diffi ing uphrenus et the other hand at 12 udiputable that many patient who was disknosed a manifestive because lead by benefited by psychomalyte treatment and some have percentage of the latter care even been cared. These inflernees of n a light is soon small ly the law has opinion. I were have not stood in the navet accepted a denice of moral I was of the medical faculties are sound, that nearly did or to to two kind calls for a law in the case when the medical faculties are sound, that nearly did or to to two kind calls for a law in the calls knowledge of the acts. psychelogic I understinding and paycho the logical freitment psychological study a abnormal mental furctioning has developed anto a specialised branch of medical senice under th name of [1] psychiatry (2)

DETENTION OF INSAME PERSONS

LUNGE ACT

INSANIA AND CRIMINAL LISTONSHIP ni - It i a fund in cotal pre amption of long law that every jet in of the age of discretion is since and a countable for his actions until the contrary a proved the buiden of proving the mean wity or mental defect is placed on the prisoner and it is fit t what he is domfor the jury to determine is equestion of fact whether the detence have proved that the prisoner was more at the time when he committed the come. The tests to be applied by the jury were formulated over a century ago in consequence of a plea of I ruised in the case of h v Machaughten (1813) The Rules formulated by the last mane, for a mains of this special judges to whom the House of Lords verdict entails an order that the accessed addressed a series of questions on the law | 1 c kept in custody during His Majesty's addressed a series of questions on the law | 1c. kept in custody during His Majesty's of insanty land down four propositions | 1casure. See also (1918 at Law, Luxwhich could be used as a guide where I is | 1casure. See also (1918 at Law, Luxwhich could be used as a guide where I is | 1casure. See also (1918 at Law, Luxwhich (1918 at 1818 at

partially deranged, knows that he is doing something unlawful at the time of the commusuon of the act (n.) the test of I, which ought to be submitted to the jury, us 1 direction from the judge on the law, we held to be that To establish de we held to be that To establish us tener on the ground of meanity, it must be the representation of that at the time of com-mitting the act the party accused was abouting under such a defect of reason, the mind a not to know from disease of the mind, as not to know the nature and quality of the act he was doing or if he did know it, that he did not kn with it he was doing wrong ' (iii)ifa ctson is under a delusion is to the facts which exited at the tune of his wrongful et but is not otherwise mane his he blity for these act mu t be considered in the list of his habitity had those en-min times bein real ty) a medical uni tinees been real iv) a medical rawhola been present throughout the trail caunal property be asked his opinion 1 11 tate of the accused's mind at the tive of the commission of an illeged crime is the would be usurping the question who had was for the pury to decide it is lift be convenient to allow such a fire tien where the first hie not in issue i i the question is substintially on a

The crules have long been subject to enough to be legal and medical writers. In non-necestance by the law of the defence of uncontrollable impul e (for ex if the meases of shop he fing where a per a centre suffering from klepto marricle that sail knows that he is doing to them were has often been strongly itti ked by emment nembers of the i where there is knowledge of the acts fertuned but the moral appreciation is it end of affected. Moral imberlies is were recognised under the Mental 1 factor Acts, 1415 and 142. Where son is nentally detective and has vi us or criminal proper are which is existed before the ise of eighteen which tic Court has power to ricr confinement m in institution or place for defectives in let the care of a guaranta. Moral defiin vor sadistic or s vial perversion do 11 fill within the Rul s ir Macnaughten's unless the jet on either does not be with the is dong or does not know t what he is done wrong and they not form good at unds for a defence 1.1 The defence I in answer to a timinal charge is a cit general applica It is, however rarely pleaded as a det fence to charges of less gravity because the consequences the verdiet of Guilty

Inscribed Stock, see REGISTERED STOCK. Inscriptions (from Lat. in, 'upon' and scribere, 'to write') is the term given to records cut. engraved, or moulded upon hard material such as stone, metal, or clay. They are found on rocks, on slabs of stone. on temples, tombs, or anet, buildings, on vases, seals or gems, on copper plates, on iron or bronze tablets, on gold, silver, brass, crystals, ivory, and so forth. In the Hible, there are numerous references to writing on stone: the 'tablets,' which Moses received and afterwards re-wrote the Law on Mount Sinai were slabs of stone (Erod., xxxi, 18 and xxxiv. 1), and (in Deut., xxvii. 2-3) Moses was hidden to 'set up great stones and plaster them with plaster' that they might have a surface capable of taking a legible text of the Law; also Joshua 'wrote upon the stones a copy of the Law of Moses' (Josh., vii., 32). Clay was the most common writing material among the anct. Mesopotamian peoples (see under CUNEIFORM WRITING) and was also used in Syria cat Ras Shamrah, the anct. Ugarit, a particular cuneiform alphabet was employed) and in Crete, where many thousands of clay tablets have been uncurthed, as well in some other Near E. countries. Bronze was used by Gks., Etruscans, and Roms, as a material on which to engrave votive I. laws treaties, and other solemn documents. The Chinese earliest extant written documents are either on bronze or on bones. The most noteworthy characteristic of the 'pro-historic' Indus Valley civilisation (q.r.) in the middle of the third milcon (4.c.) in the initial of the third initianism B.C., is the still undeciphered script preserved in about 800 finely cut seals of stone or copper. India, and especially S. India, is particularly rich in inscriptions of all kinds. The importance of the S. Sarritio I am. of the S. Semitic I, can be gauged when of the S. Seintle 1, can be gauged whom we consider that practically all we know of early S. Arabian hist, and that of pre-Islamic N. Arabia, is based upon them. Indeed, these numerous S. and N. Arabian I. are our main source for the study of the once flourishing kingdoms, whose splendour has been immortalised by the Biblical account of Solotoon and the Queen of Sheba. Also the numerous inscribed stelae and stone 'altars,' and the inscribed polychrone clay pottery of the anct. Mayus (Central America), as well as the wooden tablets of Easter I-land in-scribed in a 'mysterious' script may be mentioned.

Until the end of the nineteenth century when people spoke of 'ancient history they usually meant the hist, of anct. dreece and Rome; it was thought that nothing could be known about the earlier times except what is found in the pages of the Bible. In the early nine-

der, 1927; A. J. Rosanoff, Manual of Psychiatry, 1929; S. Thalbitzer, Emotion and Insanity, 1926; R. G. Gordon, The Neurotic Personality, 1927; Isobel Hulton, Mental Disorders in Modern Life, 1910; R. D. Gillespie and D. K. Henderson, A Text-Book of Psychiatry, 1911; C. P. Blacker, Neurosis and the Mental Health Services, 1916.

Inserthed Stock, see REGISTERED Space. tions of Egypt, Mesopotamia, Indus Valley, Syria. Asia Minor, Arabia, Crete, etc., previously entirely unknown, or at best known only from the facts transmitted through the Bible or Graeco-Rom. writers have been brought into the full light of hist. Scores of scripts and languages, some of which are not connected with any surviving tongue, have been de-ciphered: grammars and dictionaries of previously unknown languages have been written; and many aspects of historical cultures have been constructed only on the basis of L. For example, we know vastly more about the reign of Hammurahi of Babylonia, eighteenth century n.c., than we know about the reign of King Alfred of England. Consult; Corpus Inscriptionum Graca-

rum (Berlin, 1 vols.) 1825-77, and its successor, Inscriptiones Gracea (Berlin, 14 vols.); Corpus Inscriptionum Latin-1562); (Bethu, arum Corpus arum (Bettin, 1862); Corpus In-serryptonium Stanilicarum (Paris), 1885 f.; Corpus Inscriptionium Indicarum (Calcutta and Oxford), 1877 f.; Corpus Inserip-tionium Etrascarum (Leipzig), 1893 f. For cunciform 1, see W. Wright, Fascimiles of Manuscripts and Inscriptions, 1875-1883: D. A. Chivolson, Corpus Inscriptionum Hebraicarum (St. Petersburg), 1882; E. Hibner, Monumentalingua iberica, Berlin, 1893; Corpus Inscriptionum Hithiticarum, (Berlin, 1900 and 1906; Epigraphia Zeylanica (Oxford), 1901; A. J. Evans, Scripta Union, 1909, and The Palace of Minos at Knossos, 5 vols., 1921-35; Hieroglyphic Tects from Fayiptian Stelae de, in the British Museum, 1911-1914; Epigraphia Birmanica (Rangoon) 1919: 8. G. Morley, The Inscriptions at Copan, 1920, and The Inscriptions of Peten, 5 vols. (Washington), 1938; Hillite Teals in the Canoform Character (Brit. Muscum), 19201; G. Coedes, Recued desingeriptions du Sam, (Bankok), 1924 I.; E. A. Wallis Budge, The Rise and Progress of Assyrio-logy, 1925. Corpus Inscriptionum Elamicarum (Leipzig), 1926 f.; Corpus Inscriptionum Chaldicarum (Berlin and Leipzig), 1928 I.: D. Diringer, Le iscrimin antico-chraiche (Plarence), 1934. For biblio-graphy on tonic I. see H. Arntz, Handbuch der Runenkunde (Halle), 1935; R. A. S. Macalister, Corpus Inscriptionum sularum Celticarum, vol. i. (Dublin), 1945. Sec also Alphabet, Cuneiform Writing; EIRI SCAN LANGUAGE AND WRITING LANGUAGE AND GARIJO WRITING: GREECE, LANGUAGE, AND GREECE, Treek Language; Hieroglyphic, Hieratic And Demotic Writing; HEDRAW LANGUAGE AND WRITING; HIT-

OGHAM; PARLAYI; RUNES; and WRITING. Insect Bites and Stings. The greatest danger from insect bites and stings lies earlier times except what is found in the in the disease-producing organisms that pages of the Bible. In the early nine-the insect may carry. In this way mosteenth century very little was known about quitoes carry malaria; fleas, plague; lice,

BREW LANGUAGE AND WRITING; HETTITES, LATIN LANGUAGE AND WRITING;

typhus fever; and so on The biting inseets which directly give most trouble to bed bugs. With their picting mouth parts these forces purcture the skin and then sick blood through the proboses Graty and mosquitoes poin a little salivation. into the wound, so irrititing it and promoting the flow of blood to the surface Breeding of gnats and mosquitoes may be standing water. I ish and aquate insects that will cat the large should be kept in standing water that is needed for any pur Strong essential oils such as oils of lavender and cut dyptus will keep aw ty gnats, mosquitoes and ile is Bites should not be subbed neit ition may be allayed by bathing with a cooling lotion and the application of minorial If the would be comes septic hot funcitation, should be upplied to drive twin flers clothes and even the body rity be dusted with fresh pyrethrum powder. The modern [n] ecticiles (j,ℓ) such is [D,D,I] are dso very effective. Dogs should be tie quently we had with a good disinfer tint dog soap. Bugs may be externing ated by tuning tion with sulphir. It treat Britain to a name in cets no In st name in cets no bees, wasps, occasional hornets, and ints If the sting remains in the flesh at should be flicked off with a quick lateral movement of the finger had and ammonia or sodium beginson ite solution upplied Pressing on, or tubbing, the wound is to be avoided so forcing the poison quickly into circulation the wound should not be sucked because the poison may affect the Somo insects are covered with hairs. The larva of the Brown month. stinging hairs tal moth has barbed hollow hars con taining a find which in contact with the 11 timogales, are adjusted and others skin sets up a rish rescribing eccent placetic shrews or tup as of India and The hars may be blown by the wind to clothing and cruse are it discomfort alkaline lotion containing menthol An i /m oxide, and a disinfectant gives relief Insecticides are indispensable to

farmers and horticulturists A specially prepared maxime of flowers of sulphur and | tri quicklime in the proportion of one to four makes a good whitewish for fruit trees in the spring and also effectually prevents to blight on pear trees. It kills the insect pests by mems of the sulphurous fumes which are given off. An application of lime is similarly effective and in no way interferes with the vegetable growth Many recommend also dry tobacco ti powder or tobacco soaked in hot water . a soft soap solution with one ounce of soap to the gillon a substince containing arsonic and known as Patis green, and what is called the Bordeaux mixture which consists largely of copper sulphate Wasps nests may be destroyed by pourmer a ladleful of tar down the entrince hole and also by a solution of cyanide of potas and also by a solution of violate of partial sium (2 oz to the pint). But extreme cantion must be observed with this latte as it is a virulent poison. The caterpillarwhich attack gooseberries and currents are of entrapping tiny animals and absorbing bost removed by the tedious process of their nutritious juncs. A well known hand-picking, but they will soon die if sub. I. P. of S. America is Dionaga muscipula.

London purple, which is an arsenite of lime, and therefore, like Pursgreen, highly poisonous. A thoroughly mixed dressing of line, and soot if liberally applied soon gets iid of the saw fly which eats into pears and cherics. Injections of pure chlorine gas did away with an out plague at La Rochelle. Hy tapes and by reclision and with honey guin or some other sticks substime like freach and budlime rapidly icduce iswum of house flies In recent vens organic compounds, complex deri valves of bruzen, have been used as Is with very good results. The best known in 10 b 1 and gammes are Deris powder is also useful in the garden

Insectivora (Lit for insect cating) order of placental, non-volunt maninuls ne small, and derive their name from their common food. All have teeth be ultrily well id upted for cating in cets with tiny coincil tubericles on the top of them latteeth. Many have chill complement of teeth mesors camaes pic in lit molus and even temporary milk till is. The actual number years with It has The actual number varies with full out families, but forty four is an average tetal. I put the genter parts of the colors on the ground when they walk the deson the ground when they was used therefore said to have plant acts of the fact are five toes each one and with a claw. They occupy an exceedingly low place in the seale of her acid development and in certainty. n ligher than marsupeds many 700 laits indeed regard them is being more or less representative of the primi in ne of less representative of the primitive minimalian stock the skull is of a most backward type, and the brain exists is relatively small. In high the face generally speaking both terrestrial and mochanil, a few, however, like the the Malay Penmsula, are ubore il Quite trum ber as e y, the large group of moles i Lupuda burrow in the ground Many ts il I havo been discovered especially all in the Tertitic stricts and more than 200 lly living species are known. More of nod to order multiply with a tonishing out apolity the hedgehog may have a latter t cent, whilst that of the tenree some numbers over ty nty ul u system is well developed then In is thin and shrews and other species provided with ent glands at the les of their bode. Australia and America are the ally large areas of Flobe where their me no I, in all ther tropical and terrerate zones there many topicsent ance

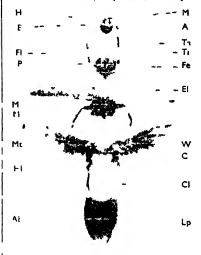
Insectivorous Plants One of the most mortant of the escutial elements of but food is introgen. Usually it is obtuned from the niti ites of the soil, para-ites receive it from the bodies of their host plants, legunmous plants hving in symbiotic relationship with bacteria prob ably exchange some of their carbon for the introgenous compounds of the bactern I. P., however, adopt the simple expedient jected to a spraying or syringing with or Venus fly trap. The leaf-blade forms

a round flat disc edged with teeth near i the apex, and each half is capable of an insect alight on one of the ensitive hars, the leaf blades cui upwards on closing the creature and soon absorb the integer it contains. The inchange ism of Drosera rotundifolia (see Drosert), the sundew common to But moors is very similar to that of Venus fix trap, but it attracts its piece by means of sticks, glistening dew like muching thence the name sundew) Another common But plant of like habit is Pingureula ulgaris the butter wort pretty her with a resette of pile green leaves growing close to the sound and a flower somewhat resembling a wild paney nower some wn the emining a wild pliny throughout the hadder wort, is an aquatic I Ps, which produces bludder shaped traps - the insect enters the blud-der readily by means of a valve opening inwards but it is unable to return, and after its death its decomposed el me its ne absorbed by the cells which line the bird der Many I Ps such is those previously mentioned and also the Nameric in pit cher plants (Nepenther and Sarruenna) produce an actual digestry mine. These plants would be better the control of the second sarruenna and sarruenna beauty would be seen to be s plants would be better describ d is car my orons since the bladderwort for in stance feels on small equatic crust a cans as well as insects Charles Darwin showed that the sundew would use bale I white of erg and similar material Sec (Dawin Insection in Schules 187 L Lloyd Carnivorous I lands 1912

Insect Powder, see unt r Insect Bills

Insect member of the invertebrate group of Arthropola liner are over a quarter of a million species known today and the likelihood is that entamology will reveal many thous ands more Thus Is are by far the largest classef minials and can further claim a very tem to in c try is the Lower Silution to k in the culle t ages known to geologies here distinct traces of them. A type of I stends con-siderably higher mathematical in the than Peripatus of Wynapods. Its body is enveloped in a horny substance cilled chitm and is structurally composed of three days which are frequently so narrowly united that the I seems cut up into three partsa phenomenon which his given the classis name (meet, Lot for cut into'). These three dies are the head thorax and abdomen. The adult I untilly his wings and these are attached to the second and third segments of the thorax Some in sects (the Diptora, or true fles) have in stead of the second pair of wings small outgrowths halteres, us d f n balancing Beetles have the first pair represented by wing cases or clytra which protect the delicate flying wings. I we look are pre-sent on or h theracic segment whence an is call d a Hexapod (six legs)

is have three pairs of appendages (jaws), with which the insect procures and also misticates its food. There is also a pair of pic oral outgrowths called foclors or antenne Some will Is have two kinds of eyes there are two compound eyes which are set one on either side of the front of the head and are made up of numerous SE sided lensed facets between the ecoes there may be present the shuple-



1 11/1 11/1 THE LATES OF A TARROX INSECT 110 811 111

111 Mitl A atrna Light time laters a little М as Manifella Hester ١ three Helitall 11 11 11 CCKA W 11 T WIL mits In lateral 1 bl 11

lens degra called ocelle which are often dif (din a group of three ind are really only ye points. A compound eye can be only we pants. A compound eye can be well indiced me house fly. Larve, that is, young Is have only occli. The thorax is note up of three secments cach provided with a pair of jointed less on the lower surface. I wo pairs of compressed dotal sales that is whige, are fastened to the upper surface of the two hinder segments. In some species there is only a stack pair of wings, whilst in others the second is still very undeveloped. The abd one in his no limbs, unless stings, pinve p ints. A compound eye can be abdomen has no limbs, unless stings, pinwhence it ranks with other Tracheta of several and the wapons of official of the organis. Appendix on the mouth is situated at the front and on the lead are of four kinds. First, there are underside an upper lip (labrum) being two antennes springing from the forehead.

and have many nerve-endings which make it probable that they serve as organs of touch, by which impressions are conveyed from one f. to another, and perhaps also as organs of smell. Secondly, there are the mandibles or biting and upper jaws, which in insects with the masticatory type of mouth are simply hard plates adapted for mouth are simply hard plates adapted to crushing and cutting. Below these are the anterior (1st) maxille, or lower jaws, which are provided with jointed palps, that is, sense organs, and which often have quite a complex structure. The posterior (2nd) maxille are the fourth pair of appendages. These also are complex and dippendages. These also are complex and furnished with palps, and are, moreover, usually united at their base to form the labia. The mouth is formed of the mandibles and the two pairs of maxille, and may be of the sucking or chewing type. Thus moths and butterflies have suctorial mouth arrangements, and whilst their mandibles are only slightly developed, their 1st maxille have become probosces by being protracted into a spiral tube. The months of beetles are masticatory. The trutk appendages are the three pars of legs already referred to. Each limb is divided into five parts, namely hip (e.s.) trachauter, thigh (femur), shin (tibia), and foot (tarsus) with claws and pads at the extremity. Sometimes there are tarsal hairs and glands, which enable the I. to grip a smooth surface; the legs of a daddy-longlegs, lank and long, whilst the water boatman can swim with his, and other insects use theirs for making a noise.

Skin and Glands. - The chitinous cuticle or integument, which forms a kind of ensheathing skeleton, often bears bristles, tubercles, scales, or bairs the last of which may be tactile or olfactory. Is, are sub-ject to moultings, since the cuticle itself cannot expand to allow for growth, and cast their whole skins many times before reaching their greatest size. The skin serves as a firm support for the highlydeveloped muscles which work the wings. legs, trunk segments, and organs of the mouth and further control circulation and respiration. Bees, coccus Is., etc., have wax glands near the bottom of the abdomen or on the back; a number of larvæ, especially such as weave cocoons, have spinning glands opening near the mouth; bugs have odoriferous, and wasps and stinging ants poison, glands, and few is. are without salivary glands, which also open near the mouth.

The nerrous system differs, broadly speaking, from that of vertebrutes by having a ventral instead of a dorsal nerve cord. The nerve centres, called 'ganglia,' which are simply masses of nervous matter, lie lengthwise along the lower part of the trunk and are connected together by a double chain of nerves. From each gaug-lion branch nerves are despatched to dif-

of them more highly developed than those of hunan beings. Is, which visit flowers are wonderfully sensitive to fragrance and to colour, and it is largely by smell, it seems, that I. recognise friends and foos. Some entomologists credit them with a sixth and dermatoptic sense, because their skin seems able to appreciate minute difterences of light and shade. Is, hear by means of nerve-endings, called tympanal and chordotonal organs, which lie on various parts of the body surface and greatly surpass human beings in their auditory faculties. Many, like ants and bees, which lead a social life, show signs of extraordinary powers of intelligence and ingenuity in adapting fresh means to compass a particular end. On the other hand, much of what appears to be their most utelligent behaviour is purely instructive, and when this is interfered with, the insect is unable to adapt itself intelligently to the new situation.

The circulatory system centres round the doesal blood-vessel, or heart, which lies lengthwise along the upper surface of the body, just below the clutinous ensing, and which is a tube composed of segments with valves between. Behind, this tube is closed, but in front it is prolonged into a fine channel, the aorth. The blood, which is a colourless, pale green, red, or yellow fluid with amorboid cells, is pumped out from the heart into the various tissues until a muscular contraction of the body forces the blood back into the heart. Lacune, which have no definite walls, take the place of blood-vessels properly so-called. The blood, unlike that of vertebrates, takes no part in the transport of oxygen.

The respiratory system of 1s. is remarkably efficient. Air-conducting tubes, called trachee, are distributed net-wise all over the body, and open to the outer air by means of paired apertures called spiracles, or stigmata. There are usually two pairs or sugmeta. There are the abdomen, but the thorax and ten on the abdomen, but the number varies considerably. The spiracles are often protected by hairs. water 1s. lateral or terminal outgrowths, known as tracheal gills, replace the stigmata; the oxygen dissolved in the water can penetrate through their thin surfaces. The tracher are ingrowths from the outer outcle; they are hard with chitin, and appear silvery and ghstening; the air is probably driven through them by muscular contractions, easily seen in the abdomen of a wasp, and continuing even when this part has been cut off from the rest of the body. By the development of spiral bonds of strengthening material, the traches are prevented from collapsing. while the diffusion of oxygen through the thun parts of the walls into the surrounding tissues can proceed freely.

The alimentary system varies with different species and also to some extent with different diets. The alimentary canal, from the parts of the body, and in the ex- which passes from nont to back usually treme front is a larger pair of ganglia, with sev. loops on the way, may be usually called the 'brain'. From the divided into fore, mid-, and hind-gut. 'brain' the two nerve chains, or cords, Mouth, pharynx, and gullet compose the divide so as to encircle the gullet, after fore-gut; sometime the gullet is swellen which they reunite. As regards their into a kind of crop, the honey-stomach of sense organs it is certain they have some the bee; sometimes it is prolonged into a

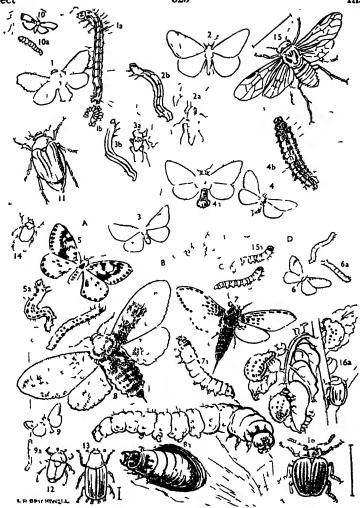
gizzard with grinding plates to promote mastication, and sometimes it has a pouch called the sucking stomach. The fore- and hind-gut are lined with chitin; not so the mid-gut. This is a chyle or digestive and absorptive stomach, and leads into the hind-gut or intestine, which is often coiled and glandular; it is longer in I. which take solid than in those which take liquid food. The intestine absorbs digested food and the soluble waste products leave the body by means of a set of winding threads or tubes, the Malpighian tubules, which usually grow from its upper part. Solid waste products are exercted the ough the anns.

The reproductive system is represented by paired reproductive organs, the products passing out through paired ducts, the rasa deferentia of the male and the oviduets of the female. The sexes are quite distinct and differ in other points of structure as well as in reproductive organs. Thus the female of the butterfly Orggia has no wings, and among Strapsidera (bee-parasites) the female never leaves the grub stage. Males can store up spermatozoa in pockets, and similarly certain females, like the queen bee, can preserve for years the spermatozoa received from the male, so that she can continue to lay fertile eggs long after her last sexual union. She does this by means of an internal seminal storage vesicle, the spermathera. Some temales have a well-developed ovipositor at the end of the abdomen. Sexual selection is practised among Is., a fact which has probably contributed towards more speedy evolution of strength and beauty. Sometimes the males hight for some feminine prize, whilst among bees and other Is, the wooing is quite an elaborate process, the female in this case choosing her mate. Some 1s, are exceptionally fertile, as for instance the silkmoth and queen bee; others, among them certain Aphides, are remarkable for purthenogenesis, or virgin birth, i.e. development of egg- without fertili-ation, which sometimes occurs for a limited period only, and is afterwards followed by normal sexual reproduction. A have of bees usually has only one perfectly mature female, the queen bee; the mass of females who carry on the work have an immature sexual development, and are therfore called 'neuters,' or 'workers.'

Metamorphosis is a phenomenon common to the majority of 1s. However, among Collembola and Thysanura the young, which, as in most is, are hatched from the eggs of the mature female, differ from the adults only in point of size, and even among liee, locusts, cockroaches, and many buys, the only distinction between the infant and parent is the immaturity of the reproductive organs and smaller wings in the infant. These species are therefore and to be 'ametabolic,' that is, not subject to change. Cicadas, Ephemera, and dragon-lies, on the other hand, are classed as 'hemimetabolic,' being subject to portial change. Thus a larva of the cicadas lives on the ground and has anterior limbs suited to burrowing, whilst fully grown cicadas live among grass. The

dragon-fly is winged and aerial, and breathes with open air-tubes, but its larva lives in the water, and has tracheal gills for respiration. But a large number of species, including house-flies, beetles, and butterflies, are 'holo-metabolie' or subject to complete transformation. The eggs are deposited in such large numbers eggs are deposited in such large numbers that they have individually only a very limited food-storage capacity. The result is that each larva is obliged to assume a shape which will allow of its better growth and development, and the form assumed varies a great deal among the different species. The larva of a fly is a maggot which has no distinct head; that of a bee is a grub, whose head is clearly marked; and the caterpillar is the larval butterfly. The normal growth of a larva of this class is as follows: At list, after it has emerged from its shell, it is very ac-tive and greedy for food. The body is segmented and supplied with all the organs except the sexual; there are no wings nor compound eyes. In every larva, more-over, what is known as the 'fat body,' that is, a mass of fatty tissues in the trunkeavity, is peculiarly well-developed. Here, after a busy life of moulting and growing, it accumulates stores of reserve food for use during the coming metamorphosis. Larve for the most part crawl about, and to aid them in movement they may have from two to five pairs of 'pro-legs,' that is, foot-like processes, on the abdomen as well as true legs on the thorax. The period of change is called the pupal or chrysalis stage. Some larve, such as those of the slikmoth, spin cocoons of silk to serve as a shelter during the metamorphosis. The herea now becomes a 'pupa,' which is quiescent and campot absorb tood, but sometimes, as with drugon-flies and grasshoppers, the larva is transformed into a 'nymph,' which cats and continues active. Wings grow, and, what is still more marvellous, there is gradually taking place a complete reconstruction of the internal structure of the former larva. Ameeboid cells are fashioned out of the larval organs, and upon the run of the latter there grow new structures better adapted for the changed life that is to come. Finally, the changed life that is to come. Finally, the pupal husk is broken, and there emerges the 'mago' or perfect 1. The task of reproduction naturally rests with the fully grown f., which sometimes dies after it is completed. The sexual organs of larva and pupe are usually imperfect.

The classification of 1s. is based upon variation in structure, especially upon the various types of wings and mouth arrangements. Some of the most distinctive orders are: (1) The Collembola and Thysanma, together forming the group Apterygota, the wingless insects with incomplete metamorphosis. These orders include the 'springtails,' certain plant lice, the 'birstletalls,' and the 'silver-fish.' (2) 'Neuroptera' (nerve-winged): May-flies, caddis-flies, scorpion-flies, and dragon-flies, white ants, and book-lice all now usually regarded as forming separate orders. These have four glassy and membranous wings, an incomplete metamorphosis, and a mouth of the biting type.



INSUCES INTERROGS TO THEFT AND SHRUB

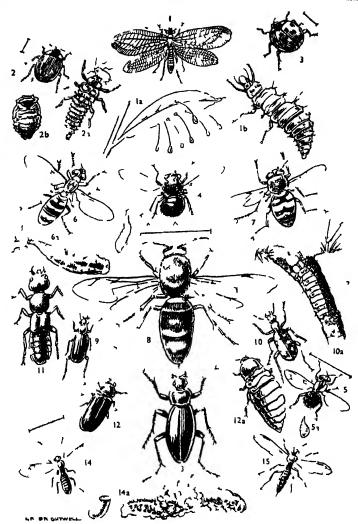
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Mottled Umber Noth (Hyberne 1 lehrue)
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Moth (Arsopteriv ex ultria) 1 lental | Harva 4 Bi w lul With (Vybmia
phaerinoea) 17 lental | th Live 3 Wispi Moth (Abaux 1 rossidariata) 51
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Lavi 6 Winter Moth (Chemitolia bru 1) (1 Live 1 Live 3 Wispi Moth (Abaux 1 rossidariata) 51
Lodin Moth (Carpoc ipsu pomonilu) 1 Live 1 Live a desculing fi rolled leaf 11
Codin Moth (Carpoc ipsu pomonilu) 1 Live 1 Live a Api c 11 (xkchafter Beetle
(Melolontha rulgaris) 12 Rose (hater Beetle (Ce ma aurata) 13 Ph Beetle (Hilsinia
psuberda)—unlived 14 Guden (hater r line Bug (Philloper 4 horticola) 15
Looseberry Saw fly (Vemutus ribesti) 151 lavie 16 Cooseberry D Hawthorn
Libe drawings are life size (xeept of very smill it sects (actual sizes indicated by a line)

Most of these insects feed on others which | and cockchafer | Members of this class exart pests (3) Lepidoptera (scalo winged) butterflies and moths. Those have four wings with delicate coloured scales Metamorphosis is complete. The mouth is furnished with a probosers, and the larva are characteristic The pupa of the larva are characteristic. I no pupa or most Lepidopter is a described as a chrys-alis. (1) Orthortera (straight winged) carwig, (octoach, locust grasshopper, and cricket. They are ametabola have cered appended to the abdonich, and have the front pair of wings leathery and smaller than the back wings which they protect sometimes both pairs of wings are absent to greatly reduced, and the hind wings in 13 be modified particularly in the male and used for producing sounds eg the chip of the circket Many Orthoptera seldom of never fly but such forms usually have extremely well devel oped less and emplies the grasshoppers run or jump very rypidly. On the other hand the legasts have very powerful respectful the majority are and dwelfers on limit in tropical and temperate climates they abound but they are represented even in the polar trains and suctorial. They have four transpurent membrines were four transpurent membrines where some species is developed in the femile and may be modified into a sting. If uthenogenesis occurs they are the majority are successful. regular alternation of pathon ogenetic and sexual generation I athenogenetic eggs sexual generation a function of the construction of board development in the (diones) those of saw flue into makes a functes but those of some makes a functes but those of some makes a functe but the grant only (6) "Dipters or like (two winged) house fly, horse fly and likely the transfer of the construction of the construct diddy long legs and in squito 1 he u metamorphosis is very complete th ir months are mostly u t rid their two wings are trusparent and membranous and their larva (iv) th legics and he d less (maggets). The hind wings (iv) repre-sented by a pair of sin II suffrowths the halters which act as bulan ers. The month part show great valiety of stru-ture, and frequently so page both pure ing and suctornal organ. The graft and mosquito have mandale and first maxille The grat and modified to form pictomy stylets—the fused to form a deeply grave i structure which functions as a channel conveying parts are guided by the firk I tip of the libium. The suctorial mouth parts of such thee to as flics are aided by a very nuscular tharvax which it as a suction pump (*) Hemiptera tolf winged) aphis (given fly) cochincal insect, water boatman lice, bugs, and citida. These undergo light inclamorphosis have suctorial menths and four which which are either membranous or horny with a membranous yex. The Hemipters do con siderable dunage to plants and animals and arc onsequently of great economic importance (see Hewitzi et al., also Homoptake) (8) Coleoptere (sheath

permuce a complete transformation and have biting mouths, but then sulicut char acteristic is the horny sheath (clytra) of which then front or upper wings are com-posed so that the delicate including of the hind or lower pair is quite hidden from view, these clytes meet in a straight line when folded. Most Colcopters fly very intle and the wings are very reduced in many species Sounds may be produced in various ways by friction between the in balona and clytra of very is by the tap ping movement of the 'death watch, In blum in I by friction between the contellum an outgrowth of the second

conclining an outgrowth of the second that it regiment and the body of the long land beetles.

If and teneral Characterists —Is have most diverse hunts and frequent und aground cases hot springs and even the creative control of the teen. The food of meet a very varous - a ctake the pollen and neet a from the Leen il wit others feed on weaker species of thin working others it is internal ores trial presents of malicrammals other agains rewest on puties on matter and by hydrogeness in action of the hydrogeness of the all trespiesss new anger often orto civy information or make love by meanund this may be fre duced by the at fulling together of the rough surfaces of the ster cuticle of ly the buzzing vibration of the left like a rend ges near the sti units of the autubes or by the puick flutter of their wings Thus grasshoppers milter of their wings. This grasshoppers is their legs usined their wing ribs us hashed their wing ribs us hashed their kets charp by rubbing their wise execution. Here no be the second mean whilst the whirling sound of bees and files is due to wing motion. The defines head moth emiliar noise by blowne an out of its mouth sometimes the net is purely automate. If left unce the net is purely automate. If left unce the discount is purely automately however, the litheuity of obtuining tood inclement we then and the prediffection which birds, and caters, frogs, and fishes show for them. as food counteract their amazing recund-it. As with higher antimals, so ocitain Is are naturally protected by having an out ward at pearance which exactly counter-fert their actual surroundings. This is Homoretak) (8) 'Coleopters' (sheath the case with most and leaf is and with winged) water heetle, stag bootle, and humning bild moths Other Is are saved tiger beetle, etc., glow worm, ladybirds, from molestation by disgusting fluid dis



FI ICH I STEET

La c wit; I ly—Chrysopt (votho chryst)

spot Laidwird Beetle (occum la lipunctit a Livit with on larged 3 Seven spot Laidwird Beetle (occum la lipunctit a Livit with on larged 3 Seven spot Laidwird Beetle (occum la lipunctit a Livit with on larged 3 Seven spot Laidwird Beetle (occum la lipunctit a La Livit with on larged 3 Seven spot Laidwird larged 4 Spiny File Laidwird (larged 3 Seven spot Laidwird a Livit a Laidwird a Laidwird larged 4 Spot Laidwird a Laidwird larged 4 Spot Laidwird larged 4 Spot Laidwird Laidw

or an offensive weapon like a sting The social species, ants, bees, termites and wasps, offer a most instructive and fas and cinating field for study by reason of their intelligence, architectural skill, and

developed communistic life

I conomic value - Unconsciously, play a great part in the cross fertilisation of flowers as they carry pollen from one bloom to another. The 'my ame ophilous' (ant loving) plants are actually guarded by ants from other and hostile intruders. Man owes a debt of grititude to the hive bee for its hone; and was, to the silk moth for its sik and to the cochineal 1 for a dre but there are many species which seem purely hamital and destructive Cattle, sheep and horses are unnoved and attacked by the bot fly crops orchards and vines we a preveto a whole atmy of greedy parastic Is and the havor cused by a locust swam is often immense. House flics and fle is have been proved to It the igents which carry i dislogical or di case bearing germs in a number of infections outbreaks the mosquito is re sponsible for malarity vellow tever and the horrible discuse called Fighantiasis ar thum, and the bit of the tests fly is ha tem out typhus in text! often tit il fl is carry bubome plague. It a unneces out to enlarge on the local mutations produced by her flat and grate. See als produced by hee floring with the seeds by the Country and under in his limit of the Frovotor Country and the first of the his large of the his large of the his large of the his large of the first of the his large of the his lar Wedd, Insects Ways 1330 W W Wheeler, Demons of the Dust a study in Insect Behaviour, 1931 (I, M tealt and W. P. Hint, Fundamentals of Insect Life, 1912. F. Step, Lies, Wasps. Ints. and allied Insects of the Light Listes. 1932. Henri I abre, Seemes de la la des insectes Harri Taure, Scenes de le 13 à des insactes 13 3 and Social Lisfe in the Insact Borda, 1357, V B Wigglesworth Insact Physio-logy 1934. R. E. Snoder iss Principles of Insact Vorphology, 1935. Sur J. Homson The Ways of Insacts, 193 (1) Dunc in and G. Pickwell. World of Insacts, 1939. J. W. Leile, Near Horson, 1917. G. Il Stovin (ed.) and W. Stokee (compiled), the Consultance of Particle Maths, 1949.

The Caterpillars of British Moths, 1919
Insemination, Artificial Tertilisation of an egg by spermatozoa (semen) reaching it through some artificial agency, re not by normal transference of the sperin from the male inimal during mating of male and female individuals. As a thoratory experiment A. I. is frequently practised on such immils as the sea urchin and it is also carried out on a commer tal scale in trout farming Its ignst usual application is in mammals, where the earliest recorded experiments are those of spallangam (1780), who succeeded in fertilising dogs

charges, an unpleasant smell, a hard skin, I by sperm introduced artificially into the vagma A I. is now employed in the rearing of farm animals, especially cattle tening of farm animals, especially eather context have been estable it various places in the table grade buils, is stored in vacuum (thermos ') flashs and dispitched through the post to small functs who are spared the expense and trouble of an infaming mile minus bor source. All sometimes establishes pregnancy in huminis, when postule eaths that the born have a factor. normal cottus fails through some defect in the reproductive organs. There can be no objection to its employment when the sperm is provided by the husband (A.1.H.) but A.1. by some outside don σ (A.1.D.) is condemned as adultery by the Church, besides a using such problems as who is the legal tither of the child or indeed whether the child is legitimate. Nevertheless A I D is curred out regularly in it least one London clinic. See Barton a ist one London clime See Barton Wilker and Wiesner British Medi al Jonenal p 10 Jun L 1915 and L J Periy (ed.) The 1st facial Inseminate most Larm Internal Science of Larm Internal Science of In-Shan Mountain

In-Shan Mountains, 1 inge in Mongolia, on the N side of the Hwangho The rise to in ultitude of troin 000 to 5000 ft and we apart of the extensive klungan mt hams or tableland of I Asia mt hous or tableland of I seru eta Mongolio from Menchuria. mt

Insolution, Salasii oki I isolveney denote and that to pay one s He term so fir is king liw is on mell is fit most fractical purposes tell ed by the term is inkrupted (see Bannett) and on the eld distinctions letwing I and builtingter). In Sects liw tinkiuptey is hardly a term of at, excit in the phrise n lour bankruptey which implies a condition of I attended will certain statutory effects restricting th in dvent's power of dealing with his 11 1 its but it is if a commonly it ed in corne from with the public bankruptes with in insolvent yields (essere) his pricity up to his cicditors. Taken in thes litter senses the term does not differ essentially from the state of a debtor who has been adjudicated a bankrupt under In the The importance in sorts law of the condition of 1 is distinct from built inter which has become public, is that has certain special effects on the delter's power of grunting alienations. The nost important general effect of I is that it is a step in the direction of noton bail aupter at being a nocessary condition to obtaining a cessio bonorum. Tho that the insolvent is restiained from depleting in estate or fund instillerent to meet all claims by voluntary or gratintous illenations or by allenations made for an inadequite consideration or by fundulent preferences of one creditor over others. The only courses open to an over others inselvent failing his mability to regain his solveney are to go through with his public adjudication of bankruptcy or sequestra tion, or to try to provide some voluntary or extraudicial arrangement of a more or less private character

Insomnia, see under SLEPP.

LATION

Inspiration (Lat. inspiratio, from inspirare, to breathe into), term used in theology to denote that Divine influence on the writers of the Bible by means of which their writings became a Divine revelution. All orthodox theologians are correct in recurrent that the benefits are agreed in regarding the Holy Scriptures as the revelation of God in some sense, but there is much difference of opinion as to the method and extent of the Divine in-spiration. The dogmatic formula of the Church on the subject, to be traced through various councils and writers from a very early date, simply states, Thus est auctor liborum sacra scriptura, but this general statement is explained in some detail by the Vatican Council, where it was pronounced that the Scriptural writings are held as sucred and canonical by the Church, not because after being composed by merely human industry they were then approved by her authoricy, and proved by her authoricy, and the unspiration of the floty Ghost, they have God for their Author. The theory of Legenerally known as werded or mechanical was a lid for centures by Protestants. The recovered books, making the stations of Legeneral variety and individuality from the stations of Legeneral variety of the control of the character or manifestations of Legeneral variety of the control of the character or manifestations of Legeneral variety of the character of the character or manifestations of Legeneral variety of the character of the cha approved by her authority, not simply because they contain Revelation without the writers of the sacred books, making them mere instruments upon which the breath of God plays. Their words are to the writers of the sacred books, making to thous of Lose C. Darwin, Origin of them mere instruments upon which the Species, 1859, and Dissert of Man, 1871; breath of God plays. Their words are to by the Romanes, Mental Levilution in the regarded as the very words of God as thin mass, 1883; C. Llovd Morgan, Habit certainty as if a voice had a unionneed them and Instruct, 1896; A. Weismann, Issays from the skies (see Heavitten). Such a moon Herichty and Kindred Subjects, 1889; theory of verbal L. threws the whole see Alexander, transl matched, 1927; D. Weight of authority on the autograph is dz. Alexander, transl mad Men, 1937; and the Mess, which in no single case are extant. and makes trans., which must ever be more or less maccurate, somewhat danger- (deed of settlement or other instrument by ons. The theory of dynamic I. in its (which lands are granted (see Grant) who various forms is that now generally held takes the first or earliest estate (q.r.) or by Protestants as well as by Rom. interest is called the 1. Those who follow Catholies. It is that the writers did not tree I are called the hers or substitutes. lose their own individuality, but were so 'if the 1, dies before the disponer or under the influence of the Spirit of God, in mor, the first substitute or heir takes that they could make no error in the substitute or heir takes that they could make no error in transnating to mankind the truths which they were intended to convey. The theory of (1ci). Conditions annexed to the grant dynamic I, finds ample support in the will only affect the substitutes, unless the Fathers. 'The Gospel,' says St. Jerome, squitor has made it clear that the I, is is not in the words, but in the sense - also to be bound. See Bell's Dictionary; non in superficie sed in medulla. Similarly, Her kine's Principles of Scots Law. St. Augustine speaks of the writer as ' inspired by God, but yet a man -inspiratus a Deo sed tamen homo. This theory is closely related to that of essential I. which holds that the L. of Scripture relates only to faith and morals. In support of some form of these theories may be advanced among others the names of St. Thomas among others the names of St. Thomas and Polit Aquinas, Erasmus, Grotius, Baxter, Fach acus Paley, and Dollmger. See B. F. Westcott, but partifement Surrey of the History of the Canon common of the New Testament, 1896; W. Sanday, Election Inspiration, 1896; A. B. Davidson, subject ton, In J. Hasting's Dictionary of the Bible, 1898; D. Davidson, Hidden Truth, Frenchuse 1934; R. H. Malden, The Inspiration of inortals. the Bible, 1935.

Insterburg, in. of the R.S.F.S.R. formorly of E. Prassia, on the R. Pregel, 57 m. | see ROYAL.

Inspectors, Factory, see FACTORY LEGIS- E. of Königsberg. It is noted for fron foundries, tanneries, breweries, machines, tiles, leather, hides, and linen. In the great Russian general offensive of 1945 against Germany I. fell to Cherniakovsky, advancing from the E. almost simultancously with the capture of Allenstein by Rokossovsky (Jan. 22, 1915). Pop. 41, 200. Instinct. Everyone may be said to understand in a general way what is mount by I. Jacobs to the condensation of the condens

me int by 1., despite the difficulty of formulating any satisfactory demittion. Darwin himself, in his examination of the various di finet mental actions commonly embraced by the term, refrained from any attempt at definition. Is, may, however, be tentatively defined or rather la, may, destribed as those congenital or natural attributes of the mind which, though closely assimilated to, are distinct from, habit and which hippel an annual under given circumstances to act in a certain way without experience, and frequently without a knowledge of the object with

Institute, in Scots law, the person in a without a service (process it I hancery upon a breve for completing the title of an

Institute of France, estab, in 1795, was found by the Ductory, to take the place of the four suppressed learned societies of that country: the Fr. Academy of Inscriptions and Belles Lettres, the Academy of Sciences, and the Academy of Fine Arts. The Academy of Moral and Political Sciences was added in 1832. Each academy has a separate organisation but participates in the advantages of the common library, archives and funds. Election to member-inp is by ballot and subject to confirmation by gov. Every member receives a salary. Member-hip of the leadens Francaise is limited to Frenchmen—popularly known as the 'Immortals,' See C. de Francquoville. Le premer sièclede l'Institut de France, 1895. Institute of International Affairs, Royal,

Institute of Recorded Sound, see SOUND.
Institute of Sanitary Engineers, see SANIFARY ENGINEERS.

Institutes, term borrowed from the civilians (civil law) to denote text-books containing the fundamental principles of a legal system The I. ascribed to Game were discovered accidentally by Niebuhr at Verona, and on translation at once became a leading feature of the study of Rom. law Gaius' I were found to be the basis of Justinian's I., which, with modifications to suit subsequent changes in the Rom. law, are a mere initation of the curber I. Justiman's I. were expressly pub to pro-mote the study of legal principles. The four vols. of Communitaries upon the Common Law, written by Coke were by him called 1. Such a term might also be applied to the commentance of Blackaton: and stephen, and with greater appropriatences, for there is next to no scientific arrangement or comprehensive exposition of principles in Coke's work John Erskine of Carnock, prof of law, wrote Institutes of the Law of Scotland during the first part of the eighteenth century, and this book was for long the leading text book on Scots legal principles, and is even now often cited.

Institution, one of the necessary steps in ! the appointment of a parson of vicar which comes after the taking of hely orders | and admission by the bishop of the patron's presentation is a kind of investi-ture of the spiritual part of the benefice Its purpose is the entrusting to the charge of the incumbent (q,r) the care of the souls of the par -1 fills the variant benefloe with the result that no fresh pre-sentation can be made until another vacancy (unless the king be the patron) and the incumbent may then enter on the parsonage house and globe, and take the tithes. But he cannot grant or let the tithes until induction the last step in the process of becoming a parson of VICHE See Phillimore's Leclesiastical Law, 189)

Institut Français, educational centre in London its object being to promote a knowledge of France among kng. people—just as the purpose of the Brit Council is to promote a knowledge of But, cultive among foreigners. Its offices are in Cromwell Gardens, London, - W

Institut Pasteur, see under Pastitik

Lot 1-

Instrument of Government, document which prescribed the powers of Oliver Cromwell when he accepted the office of Protector of the Commonwealth of England (Dec. 16, 1653) It provided for triennial parliaments, to be in session for not less than five months, with 100 mem-bers for England and thuts each for Scotland and Ireland; an army of 30,000 men; freedom of religion for all except Papists and Piclatists; and for an elective Piotector. The first Parliament under the f. of G. sat for only five months, it not being altogether favourable to Cromwell's authority, and the Protector then followed Charles I.'s example and for some time ruled without a Parliament.

Instrumentation, see ORCHE-IRL

measuring, see articles on AMMI FER, ELLA FRICIFY— Electrostatus, GALVANO-MEIER, VOLTMFIER and WAITMETER

Insures, Gallie tribe who crossed the Alps, and were estab, in Cisalpine Gual by the later part of the fifth century a colorly before the first Pune way the Roms reduced them to submission, but they regained then liberties after Hannibal's triminghant progress (brough Italy In 196 B C they finally lost their independ ence

Insula, we Litte

Insulator, see killing CARII's Insulin is the active substance in the secretion of isolated groups of pancreatic cells forming the 'islands of Langerhaus.' In the absence of this secretion, excess of In the absence of this supplying, excess of sugar passes into the blood and causes Diabetic multitus In 1921, Dr. R. L. Mickenzie Wallis clumed to have isolated this active substance from the pancious of freshly killed pigs and administered it in capsules to diabetic patients. In the same year Dr I G Bonting (q r) assisted by



I opical Press

I G BANTING 111

Pest, at Toronto, isolated and named the active conditiont insulin, and Collip (1922) purified the criple product. For incideal purposes I is now prepared from the purificas of oxen, and is found to be benchelal only when injected Excess of I aggravates diabetes by causing the liver to discharge giveogen. Abel (1925-28) prepared crystalline I. and determined its properties, and more recently sjógren at i pada has determined its molecular weight to be approximately 35,000, and the shape of its molecule spherical. From these results, and the determination of other physical constants, he concludes that results is a partial belonging to the Instruments, Electrical, indicating and that manin is a protein belonging to the

same group as egg albumin and Bence difficulty. It may happen that a vessel Jones protein. In solution this crystal-carrying a valuable cargo is sunk where it line insulin is stable provided the pu is possible to salve a portion of the goods (hydrogen-ion concentration, q.v.) ranges from 4.5-7. Beyond this range it dissociates into substances of lower molecular constitution, but near the borders of the range of stability, the reaction is reversible. If the solution be too acid or too alkaline permanent dissociation will occur. I. is now used in courses of hypochycaemic therapy in the treatment of mental disorders. See also INSANITY.

Insurance, contract under which one party undertakes for a consideration to indemnify another against certain forms of loss. In the present day the practice of 1, has become so general that practically every contingency which may arise as the result of accident may be covered, but the earliest and most widely practised forms of I. are 'Marino,' which applies to ships and property at sea; 'Fire,' which is the I. against fire of property on land; and 'Life.' This last differs from other Is. in that, although a contract to indemnify against loss by premature death, at the same time it provides a certain benefit. For this reason life business is sometimes referred to as 'assurance,' as distinct from 'insurance,' but there is no rule for this, and the terms 'insurance 'and 'assurance' are synonymous in the profession.

The first 1. business to be practised was Marine, and it is probable that for commercial purposes it originated in Flanders. being introduced into England early in the sixteenth century. Marine business difsixteenin century. Warma business dif-fers in one notable respect from other 1st, in that, although it is done by a number of independent, self-contained companies, a large share is transacted by individuals known as underwriters. These under-writers are members of a society called Lloyd's, the name originating from a certain coffee house in Abchurch Lane, where the original members met. Their affairs are arranged by a committee, and the subscribers include the companies who also transact the business. The society has agents throughout the world who keep in touch with the shipping at all the prin. ports, and render an account of the same, together with particulars of any casualties which may have happened. An I. is divided amongst a group of underwriters, each holding a small proportion of the total amount at risk. Policies are issued to cover ve-sels, their freight and cargo, against all maritime risks, which include risks of navigation, fire and seizure, during a certain period, not exceeding one year, or for a specified voyage. The I. covers the ship or cargo, and includes the cost of the I. upon the whole. Policies may be of heing damaged by fire can be insured, 'time' policies or 'voyange' policies, as the policies or 'voyange' policies, as the property that is capable in the premium charged being based on the specified above, and are ofter valued, in hazard of the risk. For example, private specified above, and are ofther valued, in hazard of the risk. For example, private which case the sun insured is based upon houses, blocks of offices, and property of a a specific bill of lading, or open, when the his nature, where the risk of serious fire is a value of the vessel is estimated as at the slight, are termed non-hazardous, and have earned on the constitution of the very later by the hundred to of the very later by the hundred coordingly usually at about its. 64. have earned on the completion of the voyage and the cargo at its invoice price. The settlement of marine losses is of particular interest, as the question of salvage follow-

insured, and in such a case there are varying methods of effecting a settlement of the claim, and sev. courses open to adop-tion by the underwriters. For instance, they may pay the total loss and recover what they can of the salvage, themselves arranging with a irm to conduct the operations, or they may pay the insured's actual loss, after deducting the value of operations. The destructible nature of the goods insured is, of course, the princlactor, and the cost of the I, is largely affected by this. Denurrage charges and the principles governing them were revised. in 1924 at a congress at Stockholm where a set of regulations arising out of the International General Average Rules of 1890 were redrafted and adopted inter-nationally. In 1924 the Carriage of Goods by Sea Act was passed, which adjusted many anomalies arising out of the legal questions involved in contracts of attreightment between shipowners and Shippers.

Fire Insurance .- - Contract of indemnity in respect of loss or damage to material property by sire. The policy-holder (termed the insured) pays a certain agreed amount (the premium) to the insurer, and is reimbursed his loss out of the fund accomplished that he insurer. cumulated by the insurer. Premiums are generally payable annually, and as a rule fifteen days of grace are allowed for payment of the amount due. Fire I. was first introduced into this country more than 200 years ago, but there is evidence of a type of tire I. at a much earlier date by means of levies on guilds, wards, etc. the carly days companies were formed for the sole purpose of transacting me I, but at the present time most classes of I. are transacted by each. There are more than 100 Brit, companies underwriting fire I. in the United Kingdom, and most of them have extended their activities overseas, where they have an excellent reputation. It is estimated that over 75 per cent of fire premiums paid to But, companies come from overseas, and of this amount more than half is from the U.S.A. The ordinary form of policy issued in respect of trade property covers damage by tire, lightning, explosion of coal gas (except on premises where gas is manufactured or stored), and domestic bollers. The private-house fire policy usually includes thunderbolt, subterranean fire, earthquake fires (not earthquake shock), and fires caused by rioters and strikers.

per cent. On the other hand, factories where inflammable goods are manufactured, buildings of flussy construction, or situated in a neighbourhood presenting ing a loss sometimes presents considerable more than usual fire risk, are deemed

hazardous, and rated according to their ! merits Companies endersom to cal-culate the premium for any one class of trade so that over a period of sears the m come is sufficient to meet the losses and expenses and show a small percentage of profit. The profits of a fire I company are usually about a per cent of the pre mium income

To obtain data on which to calculate premiums offices depend on their loss (x) perience in past years. Because the scope of each office sex serience is not sufficiently general for accurate results to be obtained a number of companies now combine

branch of I work not does it know of the time and money spent by the I companies in testing and approving the extinguishing upleances fire claims, and building miterials Offices have surveyors and experts who may be consulted on such mitters. But fire brigides are now m untuned by cos and co bors in the part the duty was undertaken by the histocompanies. I ich office had its own fremen and appliances and fixed a metal plane of the mark on every house it in smed It bing the duty of a company s men only to extinguish fires in buildings m nel by then employer, the brighe's



THE SUN INSULANCE COMEANY THE BET ALL IN 1820 li i ai lliint i pr lu dl i i i n ttl (mim)

their analysed record for ert on types of a world remain as such sees of the building factories and shops on I charac similar that we then do not be in their company states based on the realts of their joint mark (See Fire Britains And Fire appearance. The ago jution formed by [1] pire). The third is not on the real of their joint mark (See Fire Britains and Fire appearance). them is known is the Lir Offices Committee and because of the efforts of this committee premiums have been adjusted so that as far as possible or handividual pays la equitable proportion to the I fund The in inders of this committee are called tariff companies whilst the ethat remain distinct the known is non tulff companies, and charge whatever premiums they think adequate based on their ewn under writing experience. In this litter group are included underwriters at I loyds. By penalising bad features and allowing sub stantial r ductions in premium for good, fire offices have effected tremendous im provement in methods of construction,

lighting, he sting, etc.

Many valuable lives are also saved every year through these improvements every year through these improvements against fire, lightning, aheraft, burglary, The public is not generally aware of this storm, flood, and many other perils, and

II HIN) In offices in London Liver 1 I in I Glasgow still maint ain at their own trenses alvace corps fire I com must in a cord-mee Tune with the der it of 420 000 in oush or approved senities with the Board of Irade before thy in a cot business in this country, mile they have already made a deposit maject of some other class of 1 business in luded in the Act — Their ann accounts have to be lodged with the Board every you and severe populties are incurred if

th nefer in breach of the Vet comprehensive or all in policies in re-st to private dwellings have in the pet been brought out and combine many forms of I in one document. The furniture and household effects are insured

domestic servants I. is also included. The valuers are satisfactory to both insurer certain of these risks at a lower rate.

Another form of fire I. protection now being placed before truders and manu-facturers is loss of profits or consequential loss I. The ordinary fire policy Indem-nifies the truder in respect of the material damage to his property, but this does not represent the full amount of his loss by a fire. The loss of profits policy is designed to meet this need, and reimburses him for his lost profits and increased expenditure for a certain stated period (called the period of indemnity) from the date of the loss. The period of indemnity is arranged by the trader when effecting the policy, and represents his estimate of the time necessary to set the business on its feet after a fire. The usual period is from three to twelve nonth, although I. is often arranged for trades which do not overcome the effect of a fire for considerably longer periods. The amount payable by the insurers is normally adjusted on the basis of the decrease in turnover during the period of indemnity, as compared with the similar period in the preceding year. ceding year. The ant recoverable is a proportion of this decrease, and is usually the ratio of profit and standing charges to turnover as shown in the accounts for the last inancial year. Expenditure on increase in cost of working is also recoverable. The I. is adjustable to suit all types of businesses. The rates Percenthe contents of the premises. the coments of the premises. Percentages of fire loss, a form of loss of profits 1., is suited only to the requirements of one or two trades. The policy pays a fixed proportion of the amount recoverable under the ordinary fire policy. In most eases the amount of material damage is no index of the resultant loss of profits, as a comparatively small fire may entirely stop the business until the damage is made good.

Sprinkler leakage L is now offered, as many factories, shops, and public buildings are fitted with automatic sprinkler installations for extinguishing fires. The promiums usually depend on the class of

the property be under-insured at the time of the fire, are seldom met with in policies for private dwellings or small trade risks. It may be unwise to under-insure, for the total liability of the company is limited to the sum insured, and the policy-holder and notices are rarely issued to ress than £100, to the sum insured, and the policy-holder and notices are issued to the collection cannot recover any amount in excess of for the premiums which are due yearly, that figure. The policy is a contract of half-yearly, or quarterly, except under a indomnity, and the amount recoverable is special scheme whereby an automatic the actual value of the articles destroyed is stem of monthly premiums is arranged, at the time of the fire, i.e. the mirkt, value, There is now a wide variety of classes of sor depreciation and wear and tear. The ingin headings—namely, with and without sentimental value of an article cannot be profit. Policies under the former carry covered. Valuable pictures, books, and the right to share in the profit of the profit. of similar articles less a reasonable amount

and insured, provided that frequent revaluations are carried out to meet changes in mrkt. value.

Policy-holders should note that their fire I. company must be advised of any change in circumstances which may affect the l. Notice should be given if the policy is to apply to a new address or the benefit to be vested in another person; if any part of the premises becomes occupied for a purpose different from that in force when the policy was effected: If any addi-tional or alternative method of lighting, heating, or ventuating contemplated; or when any structural templated; or when any structural templated; or when any structural templated; alterations are to be made. The I. com-pany expect and require their policy-holders always to act in good faith with them.

Life I. originally provided, as in the tase of other forms of L, against a contingency, but it has long since been extended to include a payment on a certain happening, such as death. The earliest life L on record is dated 1583, when it is probable that is, were granted to cover only short periods as a protection to creditors. The extension of the business was very gradual at first, but for the last century there has been such rapid growth that in 1870 the Life Assurance Companies Act was passed for the protection of pohey-holders. In 1909 the business was further regulated by another Act. This provides that a company transacting life I. must deposit \$20,000 with the Board of are based on the fire premiums paid for Trade, and must pub, ann. balance sheets and revenue accounts. It is also laid down that there shall be periodic valua-tions, not less frequently than quinquen-mally, of the assets and llabilities of each The 1909 Act forther governs combany. the procedure to be adopted when amalgamation of companies is contemplated, and the rights and pervileges of share-holders and policy-holders are definitely estab. The two main kinds of company are the proprietary and the muteal. With the former, there are share-holders who take a certain percentage of the profits as dividends, but with a mutual company all profits belong to the policy-holders. Two distinct branches of life I, are known promiums usually depend on the cass of two usuar to an action to goods and the number of sprinkler heads. (as 'industrial' (see Typestaty, Isyua Average clauses, which make the policy-(xxx) and 'ordinary,' but many companholder bear a proportion of the loss should be transact only the latter type. In the industrial branch, policies are issued for much smaller sums, and premiums are collected by agents of the company either weekly or monthly. In the ordinary class policies are rarely issued for less than £100, and notices are issued for the collection of the premiums which are due yearly, policy to choose from, but there are two covered. Valuable pictures, books, and the right to share in the profits of the comworks of art are usually insured for an pany, and this benent is usually given in agreed amount, because of the difficulty the form of a bonus added periodically to of ascertaining their inrkt. value. Is, the sum assured, although it can, if prebased on inventories made by licensed ferred, probably be taken in eash. No such

right accrues in the case of without profit policies, the premiums for which are therefore smaller. A life policy in its original form merely provided the sum assured at death, possibly within a certain time. This would now be called a term policy. It has been followed by the whole life policy, securing the sum assured at death whenever it may occur, up to which time the premiums are payable each year.

An equally important class of policy is

the endowment assurance, securing payment at the end of a fixed term or in the event of previous death. With any class of policy it is possible by paying a higher rate of premium, to limit the number of payments to a maximum, and this is frequently done in the case or whole life contracts, in order to prevent having to contime premiums throughout a long life.

A modern addition in life I, is an ann. benefit in the form of a temporary annuity. payable should the life assured die within a certain time from the date of the policy. This is a 'family income' policy, intended to give extra financial assistance before the assured has had time to make adequate provision otherwise. It is not necessary for any policy to be effected on one life alone. The amount required can be made payable on the first or other death of two or more persons, or on the death of one person before another. Such contracts have their uses for business or financial transactions. The premium for whatever policy is selected depends upon the age at poncy is selected depends upon the age at entry into L, and it is usual to quote for the age next birthday. The calculation of premiums is a highly technical work, which devolves on the actuaries of the L companies. They rely upon various statistics in the form of mortality tables. Actuaries .- As each premium is paid, a certain amount is absorbed in expenses, and of the balance, part goes to cover the current risk, while the remainder is held as a reserve to the credit of the policyholder against the time when the claim will arise. Thus when a policy has been in force for sev. years, it begins to be of value, and if the L. is no longer required, it can be urrendered to the company for cash. Alternatively, the company may be willing to lend on the scenrity of the surrender value of the policy. It may also be possible to cease paying premiums and convert the policy into a fully paid one securing a reduced sum assured. The rates of premium quoted by any company are for normal healthy lives, and evidence of good health must be furnished by each proposer for I. At one time it was necessary in all cases to submit to medical examination by a doctor nominated by the company, but within certain limits as to company, but whom certain mine as as age and amount of policy, it is now possible to effect an I. without examination. A person may insure his own life for whatever sum he pleases, but he can insure the life of another only if he has an insurable interest therein. In all cases a proposal form has to be completed, and any fraudu-lent statement thereon would void the contract. Questions as to family hist, and previous illnesses are asked, and if the answers or the result of the medical exam-

At one time life policies contained many At one time me poncies contained many restrictions as to occupation, foreign resi-dence, or travel, but few limitations are today imposed. The main exclusion is that of suicide for a fixed period from the effecting of the 1. The period varies according to the company chosen, but it is generally about a year. It is usual, also, to exclude certain special risks, such as motor racing, flying accidents for those engaged in aviation, active service in time of war, tropical climates when the assured is at the date of the policy known to be proceeding thither, and so on. But many special huzards may be covered by the payment of an extra premium, and for some particular occupation, and climates an extra premium is olways required. Lafe I, has been recognised as an essential provision, and the premiums have been made, within limits, eligible for rebate of income tax. Although formerly the full standard rate of tax was allowed in this respect, the provision has been amended so that now relief can be clanned only at a reduced rate. This is, however, still a valuable privilege who h substantially cheapens the cost of life 1.

Cisualty and Contingency Insurance.—
This class of 1, has seen considerable developments in the past few years. It embraces a wide range of both home and foreign miscellaneous classes of 1, commonly known as accident business, which hielides porsonal accident, workinen's compensation, motor, burglary, all risks, public hability, fidelity guarantee, all classes of engineering insurances, live stock, plate glass, and others. The field thus provided for the activity of accident under-writers is a very wide one.

Personal accident L is the oldest of the above classes of L, and at one time was conined practically to the L of travellers by train, and took the form of the payment of a small sum to cover a single journey. This ensured the payment of a certain amount in the event of accident resulting in the death of the insured during that journey. The present form of accident policy takes much the same form, which is generally paid yearly or half-yearly, is adjusted to cover certain varying sums in the ovent of death or disablement, the result of accident from any cause during the year.

Personal accident I, is not a contract of indemnity. From its inception provision was made, as in life assurance, for definitely stated benefits on the happening of the event insured against, thus in many cases covering either uner or less than the actual loss to the person insured. There are three divs, of the business: (a) accidents only, (b) accidents and specified diseases, (c) accidents and all sicknoss. Rates of premium are based primarily on the occupation of the proposer. The selective achiene is one of the most attractive. This really amounts to an analysis of the benefits and relative premiums of an accident and all-sicknoss policy, it being

left to the proposor to decide, subject to certain guiding principles, which benefits and for what sums he will insure sepa nato revenue accounts have to be pub by I companies for personal accident business in this country and yearly returns must be made with regard to claims

Primanent sickness policies can also be obtained under which the assured has a contract which can at his option, be re newed during the whole of a period which migropic cent approximately his working life and under which he can continue to claim benefits whatever the duration of

entry I imployers hability or working a compen ition I is it is usually called is a direct outcome of legislation. The I-m pen if in L is it is usually called is a pair to change premiums which, direct outcome of legislation. The firm ployer Lithlits Act 1880 rendered to apply the lithlits Act 1880 rendered to the property of t with all recoulty. The Workmen's Compensation Act of 1906 which brought under the score of the Asterical ploy r of labour till further more sed the de-mand to the class of I and sev new offices of formed whilst in addition the on in companies extended their opera-tions to the accident field. Since that date see Acts Live been passed which have elded till further to the employers obligations one the Workmen's Com-pensition Act. 192 with supplementary Acts of 1940 and 144 considered. old in companies extended their eperx Acts of 1940 and 134 consolidated the law regulating compendation to workin but applied to working meany employ ment but persons ex luded from the classworkmen. He show not engaged in manual libour whose remaneration ex ceeds to 0 a year in out worker a mem ber of the employers family dwelling in (ment t outside the employers trade menter of a public police force and per sons in the navider military service of the The maximum hability for death of an employee is the result of an accident arising out of ind in the course of his employment was \$600 and the maximum weekly a syment during the period of total disablement for work in consequence of such an accident wa 40s. If the disable ment is permanent compensation was payable for the life of the employee scope of accident I was considerably widened by the Attional I (Industrial Injuries) Act 1916 which made a con-

nature of the work done, is charged upon such total wages. As the necessity for this class of I business arises out of the lightsiation passed by various gove, it is not surprising that the gov keeps a close witch on it. In the first place I com pines in required to make returns to the Bould of Iride every year and these shew clearly whether or not adequate receive have been made. In the second pl c returns ne made to the ministry of National I on behalf of employers under viii i industrial groups giving the num ber of accidents reported during the year hi disablement. The man feature of ind the compensation paid in respect this branch of stekness I is that only thereof. In the third place some measure medically selected lives at seconded the jet antol i excessed over the premiums premiums viry according to the age of that of by virtue of an arrangement with he to or ip imes who are members of tho A rient Offices Association These com-

> y injury to third person and to preperty uising by threigh muction with the cur-loss of loss of ordaining to the car il ty 1 1 1 11 d min loss of or duming to the car ill i idents to the insured payments to have a family of the first the first terms of th In teens medical and surs callex in soft o cupants of the curlega it is on the insured or driver conti legul conti t i I trivel sen transit / Public hability I r Ein de MI tr Chile ION OF the loss of or damper to the motor of the accessores and space parts of definer the season transit to and from the accessories for a more transit to and from the accessories and space and season to access the accessories and the accessories and the accessories and the accessories are accessories and the accessories and the accessories are accessories and accessories are accessories are accessories and accessories are accessories and accessories are accessories and accessories are accessories accessories are accessories and accessories are accessories a mtment For (mmercia lehicles result Motor Cel and Iraders Public hibility min to third tens and damage to property caused the use of the vehicle including (except motor cycles) locking and unloading loss of damage. I sa of or damage be vehicle or its it es cues and spino legal defence Within the scope a commercial motor i led is included every type of mech-

in ally propelled vehicl used for business er trade purposes except motor cycles, involute coming within the definition

1 private car rulway rolling stock nd transway rolling stock. The follow a idditional insurances are added to eter policies by a lorsement where re-Injuries) Act 1946 which made a contributory social service the basis of componention for industrial accidents without income limits. The benefit for complete disablement was raised to 15 workmen's compensation policies are Workmen's compensation policies are designed to undertake on behalf of the employer his entire liability to his workmen both at common law and under statute. Promiums are based on the total wages paid by the employer, and a certain rate per cent., according to the times of provided the ments to see the first provided the control of the insured car. (5) caravan trailers. For Motor Opeles.—(1) Additional drivers, (2) pillion riding (3) passenger risk (legal liability); (4) personal accidents to insured, other specific persons, any driver of motor cycle, or sidepersons, any driver of motor cycle, or side-car passengers; (5) Continental travel; (6) employer's risk (liability to the public); (7) reliability trials; For Commercial Motor Fchicles.—(1) Loss of use; (2) pas-senger risk (legal liability); (3) spark risk; (4) goods in transit (damage by impact); (5) Continental travel; (6) em-ployer's risk (liability to the public); (7) trailers. All motor policies which include loss of ordanizate the profess risk lease. loss of, or damage to, the motor vehicle exclude wear and tear; even when mech-anical breakages are specially insured at an additional premium, any damage by wear and tear is excluded. Rates of premium for private car comprehensive policies are based mainly on horse power and partly on value, and for private motor cycles mainly on cubic capacity and partly on With regard to commercial motor value. vehicles, broadly speaking one or more of the following factors affect rates of premium for each class of vehicle : -horse power, value of vehicle, scope of cover required, locality of use, nature of use, type of vehicle, weight of vehicle and load, passenger seating capacity, and number of vehicles owned by the insured. Com-panies undertaking motor I, have to deposit £15.000 with the Supreme Court, irrespective of whether or not they carry on any other class of business. A policy of burglary I, is a contract of indemnity only, and secures the insured against the results of a crime, so that in the conduct of the business regard must be had to the criminal law of the country. Subject to any special provision in the policy, the circumstances in which a claim may arise have to be interpreted and deeded by the rules of cruninal law. Having regard to the wide range of the terms, burglary and housebreaking, many others only cover the risks of theft following actual violent or forcible entry into and upon the premises. It is obvious that in the case of valuable portable goods the rate of premium charged is considerably higher than that for more bulky and less valuable articles.

Plate-glass I., covers glass in any property against breakage through any causo, except fire, explosion, riot, and war. In these days plate glass covers all de-scriptions of glass, including plate, sheet, embossed, lettered, shop facus, signs, ornamental street-lamps and glass in shop takes to replace broken glass, instead of making a cash payment. In private making a cash payment. In private houses glass in doors and windows may be insured, the premium depending upon the rental value of the insured premises.

Fidelity guarantee enables an employer to insure against loss through the dishonosty of his employees. It is a common practice on the part of employers to require fidelity guarantee policies from any of their servants holding a position of

Gov. and Court bonds are given by I. companies. They may be said to be required whenever any person is placed in a position of trust in relation to any departis before a Court of Justice. The following are the principal classes of gov. bonds: (a) Trustees and special managers in bankruptcy; (b) Official Receivers in bank-ruptcy; (c) trustees under the Deeds of Arrangement Act, 1911; (d) liquidators under the Companies Act, 1929, engaged in the compulsory liquidation of a limited company; (e) passage brokers. Bonds are given to the Board of Inland Revenue on behalf of Collectors of Taxes and Dis-tributors of Stamps. There are many different kinds of bonds given to H.M. Customs and Excise on behalf of merchants, shippers, traders, and others to secure the revenue against loss by the improper use of articles which are subject to duty

Public Liability 1.--The earliest thirdparty policies were issued in cont. with horse-drawn vehicles, but other cisks were gradually accepted, and are now of indimited variety. In the usual form of third-party 1, the event giving rise to a claim is an accidental injury to the person or property of some stranger, alleged to be due to negligence or nuisance. owner of horse-drawn vehicles can insure against total accidents to his hye stock or damage to vehicles, or against any claims which may be made upon him by the publie through the carelessness of his drivers. 1. again-1 third-party risks is an important part of motor 1, (see above under Cascally and Contingency Insurance). The Road Tradic Act, 1930, introduced compulsory third-party L for the first time. A firm A firm may insure against claims made upon them by the public, through accidents taking place on their premises. The provision dealer may insure against claims made npon hun through ptomaine polsoning, the dentist against claims through detective work, and so on. Another class of I, has appeared as a result of the various Housing Acts dealing with the housing of the working classes. The Act of 1925 provides that houses of a rental up to \$10 in London, and elsewhere up to #26, shall be kept by the landlord in a condition reasonably fit for habitation and policies are fremed to cover this responsibility.

Under the category of Contingency I. special indemnity policies are issued in-demnifying against claims by missing hers or beneficiaries, claims under lost documents, and in respect or defects in fifle.

kugmeering I, includes electrical machinery I., Litt I., Engine I. (steam, oil and gas), and steam-boiler I. Boller I. has only recently been taken up. The policy covers damage to the boller and damage to surrounding property, or injury to persons caused through an explosion. This class surrounding property, or many to persons caused through an explosion. This class of 1., however, provides an additional benefit in the shape of a thorough ann. examination of the boiler and more fre-quent internal inspections. The business is something more than the ordinary I.,

and is consequently a class apart.
Brit. companies effect a large accident. business abroad. Of its total premiums
56 per cent comes from the U.S.A., while position of trust in relation to any depart- a further 20 per cent comes from other ment of the gov., or to any matter which places abroad, leaving 24 per cent from

this country (1938). This is a striking whose proprietary interest was mortgaged tribute to the prestige of Brit. I. houses. might, in certain cases, recover a propor-Recently there has been an increased demand for 1. against disasters due to natural causes, such as hurricanes, and during the last tew years heavy claims have been met respecting damage done by

tornadoes in America,

Agric. I. is undertaken more extensively in America, Canada, and Europe than in the Brit. Isles. In America injury by tornadoes and hurricanes to growing crops causes most damage, and a special branch of I. is effected to cover this contingency, while buil damage comes next in con-sideration. In Canada buil damage is the risk most widely covered and trost risk most widely covered, and trost damage I, is in operation in both countries. though more considerably in the U.S.A., where eighty-eight companies issue such l policies. Livestock I. forms an important |

hope to meet more than a negligible fraction of the claims that would ultimately bo made. No existing L companies would have decant of embarking on such hazardous business. The only solution lay in State action and, early in 1941, the and houses and a loss of life loss of life loss of damage by enemy action. These proposals were later embodied in the War Damage Act, 1941. [Part 1] loss owners of land, building loss of land loss of

the owners of land, buildings, and other immovable property were required to pay ann, premiums for the period 1941-45, by way of contribution towards the sums required to recomp properly owners for loss or damage by enemy action occurring be-tween Sept. 3, 1939, and Aug. 31, 1941 (further legislation was passed for subsequent risk periods). Part 11, of the Act was a gov. scheme for the insurance of private chattels against war damage and came into operation on May 1, 1911. Part I. was, but Part II. was not, com-pulsory. The amount ('contributory value') on which the premium was calculated was usually the net Schedule A assessment (before deduction of personal or special reliefs) in force Sept. 3, 1939. In general cach of the five premiums or instalments of contribution was charged at the rate of Each instalment or 2s. in the pound. ann, premium was due on July I, and was collected from the person who was the duced is below the general surface of the owner of the 'proprietary interest' on the preceding Jan. 1; and 'proprietary in ink to be applied to the paper lies in the terest' meant the freshold or any loase of recesses of varying depth on the cylinders more than seven years. A contributor or metal plates.

might, in certain cases, recover a propor-tion of his net liability for an instalment from the mortgagee.

The term 'private chartels' in the gov. scheme for insuring private chattels, covered the movable belongings of a household (furniture, clothing, valuables, etc.), and also motor cars and cycles, yachts and boats. The state allowed irro compensation for householders as follows: £200, with an extra £100 in the tor every child under 16. Every other adult person, who was not a householder, was allowed free compensation up to £50. Persons who had not insured and relied only on free compensation, might not receive more than £25 on any one article.

Over and above the limits of free compensation a person could obtain additional policies. Livestock I forms an important part of agric. I. in the United Kingdom, though it is usually undertaken in reference to pedigree stock, and is designed principally to cover animal diseases and compulsory destruction of such animals by order of the goy, in the case of foot and mouth disease.

Insurance aga of dir Raid Damage.—Early in the econd World War, associations were formed for the purpose of organizing mutual insurance schemes against damage to property by an raids. Sum, insured (whichever was the greater. No nore than \$50 or 5 per cent of the total sum covered by the policy, whichever was the greater. No nore than \$50 or 5 per cent of the total sum covered by the policy, whichever was the greater. It was soon evident, however, that no thought of the covered on any one article private association or company could Tas applied to having attacks of furming ture, expensive radiograms, and valuables.

ture, expensive radiograms, and valuables, see N. Young, Insurance, 1927; H. Loman, Insu ance Principles and Prac-leys, 1928; J. G. Sinchur, The evils of Industrial Insurance, 1932; J. G. Ander-Industrial Insurance, 1902, son, Birthplace and tieness of Life 18 yearner, 1937; A. Wilson and H. Levy, 1937; H. E.

Intaglio, strictly speaking, a gem on one surface of which a design has been holtowed out so that if this side is stamped upon some material like wax, the design is impressed and stands out in relief. Is. cmong the Assyrians and Babylonians were usually cylindrical in shape, like the chalcedony signet of Darius I. of Persia. the workmanship or which is so justly ad-mired today. The Fgyptians used to cut their scals on the flat basis of the 'scarabens' or sacred beetle—a form which is very common also in Gk. 1s. Gem-entters at first used serpentine, but as their skill mereased they preferred to work in onyx and other harder stones. Is, exist of gods, mythical heroes, instorical people, etc., the best dating usually from one of the arst three centuries B.C.

The term 1 is used to describe printing processes in which the matter to be repro-

integration, mathematical process of summation which makes it possible to had the areas enclosed by curves and the lengths of arcs, the velocities achieved by accelerations, the volumes comprised by areas, etc. From its definition as a sum mation I. may be proved to be the in verse process to differentiation. The sign

for I. is
$$\int_{0}^{\infty} Thus \frac{d}{dx} x^{2} = 2x$$
, whereas
$$\int_{0}^{\infty} 2xdx - x^{2} = See CMCLLS$$

Intellectual Co-operation, International Institute of In 1922 the League of Nations appointed a Committee which should examine international que tions on the subjects of literury scientific, and artistic work with a view to intellectual (USA) The instruction members formed the Board of Directors, which met every two months such subjects as the uni heation of scientific nomencliture, the international organisation of bibliographi cal and scientific information the development of cincin itography the extension of the laws protecting works of art and rights of artists were only a few of the ambitions schemes of the organisation. Its place is now taken by the United Nations Educational Secretic, and cultural Organisation (see UNESCO).

Intelligence Corps, see un let 184111
GISCI, MILITALY AND SECTION
Intelligence, Military, and Security
That knowledge is power is a maxim
assiduously followed by ill countries with respect to providing their nulitary leaders with the most complete information avail able regarding all other states, particu-larly those which are potential enemies Details of the military cononic and other prin resources of an enemy give valuable data upon which a plan of operations may be based. In peace, this information can be obtained in many way og the pub-statistics of a country research by persons interested in various aspects of public life or patteniar areas of the enemy's country, spies and general information contained in the Press and journals. In war the difficulty, though greatly increased, are not in-armountable spics and persons of neutral countries are employed. These can supplement information procured by air-reconnaissance by the interception and decoding of enemy wireless messages, examination of captured equipment and documents, interrogation of prisoners desertors, and escaped civilians, and reports from resistance groups in occupied ters.

Intelligence is vital to an army, but it is almost equally important to depitye the enemy of such intelligence as may be valuable to his military leaders. This is the responsibility of the Security branch, and includes consorship. If he cannot be wholly deprived of it then takes intelligence is usually smalled to him which in gence is usually supplied to him which, in certain circumstances, is more effective than letting him have no information at

Intelligence is a responsibility of the central staff at all levels. In the Birt Army the Intelligence dept of the staff is organised in two branches, A sible for collecting, collating and distrib uting information about the enemy and responsible for security. While the bulk of the information used by A' comes from the observation of its own forward troops of all arms the special requirement of b'ean only be served by special troops organised in Field Security sections which are under command of fighting formation and line of-communication commanders Both types of intelligene work are cirried out by the Intelligence Corps. This we embodied is a separate unit in July 1940 under the ultimate command of the Director of Military Intelligence. The naw and the RAL also maintain intelligence depts. RAL domination intelligence depositions of under

MININ IISIS Intelligence Tests The re are numerous systems of tests in existence today for

estimating the mental ability of children and adults for various purposes Gilten was the first to discuss these tests in his Inquiries into Human Faculty and its Divisional (1885), and Affeed Binet (18 1911), the I respection at the psycho-lest gave escres of tests for the measurement of human intelligency which i still employed today See also MINIAL

Lists

Intendant (Lat intendens, from intendere to watch over) name given in early It hist to an official invested by the king with in important commission, such as the leving of times, the administration of in meril matters generally circlet. The intendents despromers date from the last thus years of the simteenth century, and w to sent by the king to restore order in the grove after the civil wars. In 1739 the office was abolished by the National Ascimbly but the dignity was restored by National Ascimbly but the dignity was restored by National and the title of 'prefert' See to Humotaux, Original de Prinstitution des intendignals des inconfiguration 1994 des intendants des provinces, 1884

Interborough Rapid Transit Company. Interborough Rapid Transit Company. The company which operates the overhead and subway rankways of New York, much as the Metropole' serves Paris, and the 'I nde ground,' London 'I here are at present 117 m of road, with 401 m. of truk part of this being of the overhead description that traverses some of the main avonues at a higher level than the street, and part being the underground. street and part being the underground tunnel railway

Interbourse Securities, stocks and shares which are of an interpational character, i.e those that are bought and sold on the London Stock Exchange, Wall Street, the

Pans Bourse, or any of the various stock former being payable on the principal exchanges of the civiliscd world. The alone, the later on the amount of the principal and interest as and when it falls due. best examples of such securities are governotes to k or shares, like 6k or Brazil bonds (but not Brit (onsols which are held almost exclusively by people in the United Kingdom), greatgev loans, Amer railway bonds, and k Indian securities. The business of negotiating the sake or purchase of 1. S is done by arbitrage dealers, whose mode of conducting operations in 1. S is to purchase or sell on one stock securities. exchange a certain quantity of seemitics and synchronously or practically synchronously to rescillor repurchase (as the case may be) on the stock exchange of another country similar stocks or shares to such an amount as from the price (ascertamble by wire) will suffice to cover not only the incidental expenses of in terest, commission, etc. but also broker age. The great benefit of this arbitrage traffic is the resulting equalisation of and stability in the prices of the great in youty of I to

Interbred Retriever, & RILLIEVER Intercalary Days, or Months, term given to months or days inserted in the cilendar between others to adjust the reckoning of the year int and in at with the solar vent. The word interculary thus means something inserted or placed between, and is used for anything interrupting a series intercostal Neuralgia, see under \$111 \tag{1}

(1) In Scots law like the L m Rom or civil law, and the minnetion (q 1) of 1 ng law, the 1 in Scots law is a decree of order of the court to restrain any act or proceedings alleged to constitute au infringement or threatened infringement of another a rights. Like injunctions for are either interim or final. An I may be granted either by the Court of Session, the should court, of the interior or burgh courts. For illustrations of the matters Course 1 of inistinguity of the material in market and in which an 1, may be obtained se under est on loans by moneylenders is prolythylotion (2) I elemantical Law hibited, not may the contract provide for eaches consume or sentence which prothe integration of 1 being 1 reased by hibited the divine services, either to parti cular persons or particular places, or both Private baptism was allowed during the time of the L, but the Holy kucharist was not, except in ordevide modes, and christian burial was demed in any consecrated place except it wise done without diving offices. These Is though frequently excepted in the Middle Ages upon whole vils., this, provide and even kingdoms have been abolished, so far as Lingland is concerned, since the Reformation. The cffect of the placing of England under an sine country and at the same time—a law I, by Pope Innocent III on March 23 which rests for its validity on the elimina 1208, in retaliation for John's expulsion—tion from profits of compensation for risk of those monks who had consented to the of dishonourable reputation, and every appointment of Stephen Langton as primate, lagraphically described by Hume See Burns Lectesiastical Law

Interest, allowance made for the use of borrowed money or capital The rate pur cent per annum is the I on 100 units for one year. I. is payable periodically, usually half-yearly in commercial transactions, but frequently monthly in the case of loans by registered money londers

cipal and interest as and when it falls due. The exaction of I. was prohibited in Engand as cally as 1197, and the prohibition pested, as elsewhere, upon religious grounds. The old usury laws fixed a maximum rate of I, varying at different times from 10 to 5 per cent, long after everyone had been convinced that the most entire freedom in commercial matters was both the right of the private individual and the benefit of the community. Benth un was the first writer who openly and system steally condemned the usury laws, and since he wrote no legislature has ven tured to do more than 'reopen an un-conscionable brigain and mother ways to regulate the stat is of money lenders by m tence on formalities of registration Lenthan like Mill, scribes the usury laws to religious bigotry, but attaches too much importance to that source \r15 totle's condemnation of usury rested on the issumption that money is in its nature hair n and that I was the productive iddition to in unproductive object, which vew beeine traditional and is quoted in Bitiits works as a popul a fallacy emong ardi t In claborate refutation of the d ami that free access to the money mikt tends to encourage projectors is also me of the most trench with successful cuttisms in the Defence of Usury all restrictions have been long since about a ned by the legislature and the rate of I ict to the discretion of lenders and bor but the courts may interfere on 108(15 equitable grounds to prevent fraud and overs whine, and loans to infants are invalid (see CONTRACT, INTEXT). I nder the Moneylenders Act, 1900 the courts m to reopen moneylending transactions of a harsh and unconsciouable nature and reduce the rate of 1 trider the Moneylenders Act, 1927 compound interest on loans by moneylenders is proreason of any default in the syment of contract may provide that if the borrower makes default whether in respect of prin ciple of interest, the mone ender shall be childed to charge simple I on the sam lue, from the date of the default until the sum is paid, at a rate not exceeding the rue payable in respect of the principal il at from any default

It is an economic commonplace that the tate of 1 is the same in all trades in the sime country and at the same time-a law tion from profits of compensation for tisk of dishonourable reputation, and every thing but pure 1 in capital. But the thing but pure 1 in capital. But the and some trades is tuiring more super intendence than others, there must always be differences in the rate of I. or profits in different trades at the same time, and in those trades or businesses in which the rate is higher than the bank rate—the criterion of the average rate—ome economists contradistinguish such higher I. is either simple or compound: the rate by the name fulls I. It is an accepted

position in economics that as wealth and pop, increase the rate of I. declines, because, among other causes, wealthy and populous communities afford less and less scope for any given quantity of labour and capital, a tendency which is the root principle of the Ricardian theory of rent; and again the increasing export of capital tends to produce a uniform rate for all countries. to produce a uniform rate for all countries, See J. Bentham, Defence of Usury, 1790; 1. Fisher, Theory of Interest, 1930; J. Meade, Itate of Interest in a Progressive State, 1933; K. Wicksell, Interest and Prices, 1936; B. W. Dempsey, Interest and Usury, 1948. See also MONEY-LENDER and USURY.

Interprepage to the product of the Product of the Progressive States and Usury, 1948.

Interference, term which in physical science indicates a phenomenon depending upon the action at one place of two sets of waves or vibrations. A familiar example which can be used to illustrate this is obtained by dropping two stones into a still pond at the same time. Circular ripples will be set up from each stone, and will eventually meet, causing disturbance. It is almost axiomatic that the greatest disturbance will occur when trough meets trough, or crest meets crest. And were the waves set up by the dropping of each stone equal in length, then when crest met trough, or vice versa, the wave motion would be entirely annihilated. It can be seen, therefore, that it becomes a funda-mental principle in the science of light, sound, and electricity in particular. In these cases, however, the waves are usually too small for I. to be detected or observed by the senses, unless there is a continual succession of the two waves, reproducing the phenomenon at the same place for a long while. Thus in light it is necessary, in order to study I, effects, to obtain the two sources from the same ray. For the great complexity of light waves, and the fact that the waves act in all directions at right angles to the direction in which they are propagated, are conditions which prevent I. effects which are visible to the raked eye being obtained from two trains of equal waves, vibrating in mutually perpendicular planes. A simple experiment, demonstrating 1, in light is, however, that known as Grimuldi's, as modified by Young. A simple ray of light, which we shall regard as homogeneous, is introduced into a darkened chamber, through two small apertures which are close together. These two divergent rays will interiere, with the result that on the screen opposite will be shown a series of bright bands separated by dark ones. The central one, which is the brightest, is placed so that all points on it are equidistant from each apertury. on it are equinistant from each apertury, and is formed by the meeting of crest with crest and trough with trough. Theoretically the cross of I. bands is composed of an indefinite number, but the fading away in brightness of those bands in practice is explained by the great difficulty of obtaining pure homogeneous light. See Sound, Newton—Newton's Kings · Soap RUBBLES: SPECTRUM; DIFFRACTION; POLARISATION OF LIGHT; and ELEC-TRICITY - Electro-magnetic Waves Maxwell's Theory.

Interferometer. Optical instrument for producing interference fringes by the superposition of two beams of light originating from the same source, and for measuring the displacements of such fringes caused by a slight increase of path difference between two beams. 1. is the most accurate instrument for the measurement of the wave-lengths of light. Michelson's and Fabry and Perot's Is, are the best known instruments. The principle of the former has been applied since 1920 to the measurement of the augular diameter of some stars that were not near enough to be resolved by the most powerful telescopes then known. Another I. is Rayleigh's which is used for measuring small differences in the refractive judices of gases. See also interfrence and spectrum and Spectroscope. See A.

Schuster, Theory of Optics, 1901.
Interim (Lat., in the meantine), namo given during the Reformation to certain attempts made in Germany to draw up a formula which would serve as a basis of agreement between Catholies and Protestants, until such time as a general council could be held. Three attempts were made to bring this about, resulting in the 'Ratisbon Interim' in 1541; the 'Augs-burg Interim' (q.c.) in 1545; and the 'Leuzzig Interim' in 1548.

Inter-Imperial Relations Report, report of a committee of Prime Munters and heads of delegations to the Imperial Con-ference, presided over by Lord Bultour, and unanimously adopted by the Imperial Conference of 1926. As regards its general principles, the report states that equality of status is the root principle governing inter-Imperial relations so far as concerned Great Britain and the dominions, which are described in the report as 'autonomous communities within the Brit. Empire, equal in status, in no way subordinate one to another in any respect of their domestic or external affairs, though united by a common allegance to the Crown, and freely assocuted as members of the Brit. Common-wealth of Nations.' The report points out, however, that the principle of equality and smithity appropriate to status does not universally extend to function. See further under DOMISION STATUS. See also WISIMINSTER, STATUTE OF (1931).

Interior Decoration, see under Hotse; and PANTING AND DECORATING.
Interlaken (* between the lakes '), in the

canton of Berne, Switzerland, a health canton of Berne, Switzerland, a health resort much frequented by visitors, with an elevation of about 1863 ft. It is 26 m. S.E. of Bern, between lakes Thun and Brienz, on the R. Aar. It has magnifeent mt. scenery, the Hoheweg commanding a fine view of the Jungfran. Pop. 1000.

Interlineations, in law, additions to or alterations of a written instrument made either before or after the execution of the

either before or after the execution of the instrument. As a rule, I, made after execution having the effect of altering or amending the instrument in a material particular will prevent the enforcement of any rights created under the instrument. and It is otherwise with I. made before execution, provided they were made with the consent of parties whose rights are affected by the instrument. The rule of evidence is that I on the face of 1 deed are, in the absence of evidence to the contrary, presumed to have been made prior to execution, but in a will I are presumed to have been made after the teststor signed his will I which do not affect the rights of puties who are under any hability created by the instrument are immaterial. I made in a will should always be signed and attested, as in the case of the body of the will, ard a similar precution should be observed in right of those made in a deed or other instrument.

Interlocutor, in Scots liw strictly a judgment or judicial order pronounced in the course of usual which does not finally determine the luc (of lyticized to appear to be applied to all judgments or orders of the court, whether they finally dispose of

the case or not

Interlocutory Proceedings Applications or motions before a judge in seter or dist registrir in chambers for some preliminary order decision or judgment in an ection, are called I P An order made in 1 P does not finally nose of the case but, as i rule decides sim a atterine lental to Interim injunctions (see under Injunctions) how ever although not final have the effect of final judgments if on the trial it is estab that a proper case has been made out for an injunction Application in chambers must be made by summons, or by notice of application under the summons for directions (or summons which asks the master to give due tims is to the future conduct of proceedings in such matters as discovery of documents pleadings, etc.) unless made ex parte when no such for mality is required. Applications to the court are made by motion and as a rule at least two cleu days notice of motion must be given unless the court gives leave to the contini

Interlude (I at inter between, Iulus play), a short pleet or musual pace, I or formed between the lets of a play or between the verses of a harm. In drama a short performance given between the puts of a play or in the intervals of a binquet or court puge int. The characters were as rule merely per onlined qualities such as Merey and Youth. This kind of stag production, as well as moralities and my steries succeeded the older mirale plays and in the carly put of the sixteenth century, with the comedies of Niall and the tragedies of sackvill, and Norton kept the dramatics. John Herwood (14 17-1580) wrote Is and introduced a notable characters by making the major sent types and classes of men, such as pedlars and from instead of qualities. The first performance of the new shool created by the I brakethan dramatists. John Herwood (14 17-1580) wrote Is and introduced a notable characters by making the major sent types and classes of men, such as pedlars and from instead of qualities. His print Is were lower the Present 133, 4 Meny Play between the Pardonere and the Free the Curate and Neighbur Pratte, 1533 and The Play called four P's a new and doner, Potecary, and a Padlar, 1943-17

Intermarriage, see CONSANGUINTITY and MARRIACE

Interment, see Burial Acre Burial

Intermezzo (It, interlude) Originalis int musical piece plaved between the lasts of a larger work, musical or fleshial e g. Pure (Is a left tunes serving as interludes to plays the entractes in schuberts Rosamunde Later is strict concert piece not necessarily designed for any purpose implied by the number of the An I musical so do an instrumental later played during in act of an opera while the action is irrested (e.g. in Missian is a guallera rush ang).

which the chem energy latent in the fuel

Intermittent Fever, see WALARIA Internal-Combustion Engine, is one in

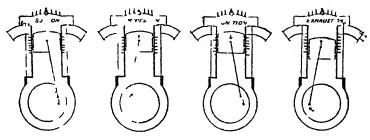
is released by combustion or caplosion in the curino itself instead of being converted in a furnice into heat used to generate The expansion of the steum ma boiler gases produced by the combustion con titutes the mechanical driving force iting directly on the piston in the reciprocating engine or the blades in the gas turbine In the simplest of all I (La the rocket motor, the gases escape through i nozzle at the lear and and the reaction or recoil on the body of the rocket drives it fuwnds In actual practice the term I (I covers the reciprocating (evilinder and fiston) type only. The gas turbine (see AI RO I NGIN 9) is of recent origin and it present being actively developed in un etien with jet propulsion of aircraft, ind for use in locometives, motor cars
(11) and as prime mover in electric power titions tutions The reciprocating engines are conveniently classified according to the fuel used as oil engines (7 r) using heavy oil petrol engines (see Moron Cans) using light oils and gas engines (q t) using a secons fuels. No heat engine can conveit into mechanical work nore than a fix tion of the heat content or he working il stince (see IHII MODY 11CS) In i (Is the working substance is the fuel, m acd with air since no fuel can burn ex tig t in contact with an The thermal h it input which is a nverted into mech mical work, it viries a coiding to the type of engine and i lucely dependent on the compression inti- which is the ratio If the cylinder volume above the piston when at its lowest position (expansion) to the volume above the piston at its highest sation (compress n clearance or com ustion space) Ib calorific value of a fucl is the amount of heat (in B 1h L) hicrated by combutton of 1 lb of liquid or 1 cu ft of gas fucl see Brit Standard Specification, 120 The gas fucls in common use arc B Th U

\(\)\text{tural} \quad \text{cal value 700-1 00} \\
\(\)\text{cal value 700-1 00} \\
\(\)\text{low of tural} \quad \text{or} \quad \quad \quad \text{or} \quad \

Oil fuels are liquid mixtures of hydrocarbons (compounds of hydrogen and

carbon in various ratios) mostly obtained by fractional distillation of petroleum. The hight oils (gasoline fraction, petrol) of sp gi 0 68-0 78 have a boiling point of 40°-200° C, calorific value 19,000 B Th U 1b They may also be obtained by cracking a chemical process whereby higher boiling fractions are broken into lower boiling compounds. Bonzol is obtained by dis tillation of coul tar and consists mostly of pure benzine Heavy oils have a sp gr 0 79-1 and boiling point above 275° C Coal hydrogenation and coal and coal oil distillation also yield both light and heavy oils, and these processes are likely to be come of great importance in the future besides the calcrift value the anti-kneck' value of a fuel is a most important characteristic. When the compression ratio exceeds a certain limit the fuel detonates on ignition instead of burning with a steadily progressing flame and this

provided with inlet and exhaust valves at the top ond, the opening and closing of which are accurately timed and operated by the engine itself through the camshaft In the gas engine the mixture of gas and in is sucked into the cylinder at nearly atmospheric pre-sure during the induction, the milet valve being own, the exhaust closed. As the piston begins to rise, the inlet is also closed, the mixture being com pressed. When the piston approaches its highest position the mixture is ignited, usually by an electric spark and the ex pansic n of the combination products drives the pisten down Just before it reaches the bottom the exhaust opens and the tising piston weeps the burnt gases out (seavenging). The eyele is then repeated The evele is then repeated Some engines, especially of smaller size (1-5 h p) work on the 2 stroke principle As the piston uses on the compression stoke a fresh charge is drawn into the



THE OLFO

kno king results mexically war of all crunicuse and when the just on descends moving parts. The antillinek value of a long the pewer trake the charge in the light of fuels expressed mits of anomain counters as a major of lowerds the ber, se the percentic volume of the cetane in a mixture of wheptane and two o time having the same kno k terdency 14 the fuel in question. The bigher the octane number of a fuel, the ligher is the com-pression ratio that can be used without Generally ki or king tiι compounds with the most compact molecule (in aturated and aromatic hydrocurbons) have the higher octane numbers, while the light oils the paraffi is are kes good obtained by cracking have higher octane numbers than those cliained straint run distillation its iddition of doping certain chemicals such as lead tetractive the octane number may be in creased. The heavy oils are characterised by their cetene number the percentage of cete ne in a maxture of cetene und a methyl naphthalene producing the imeignition

Most I (* Fa work on the 4 stroke wheel kc ping the engine running during the remaining 3. This cycle was first successfully applied to the gas engine by N.A. Otto (1876). The strokes are known in whereby the temp. rises to 1000° in whereby the compression expression.

cul et the power strole the jiston un i jort in the cylinder wall con CVU nected with the cranke ise through a by pas through which compressed charge enters the cylinder sweeping the burnt gases out through an exhibit port, like wise uncovered by the piston on the top of the piston guides the entering charactowards the top of the cylinder and prevents its being mixed with the exhaust gises. Thus the compression stroke is also in induction stroke and the power streke is also a compression stroke 2 stroke engine has no valves and is simplet in construction, but owing to imper-fect exemping and loss of fuel, it is less theant than the 1 stroke engine. In the petrol engine the volatile liquid fuel is broken up into a fine nast and mixed with the i mreet proportion of air in the carburcttor (q,i) Thereafter the engine behaves as a gas engine In the modern compression ignition (heavy oil) engine flist practically realised by Rudolph Diesel (1892), pure air only is drawn into the evinder on the induction stroke, and this is compressed to about 400-600 lbs sq. as induction, compression, expansion At the end of the compression stroke the (power), and exhaust. The cylinder is oil is injected into the cylinder under high

pressure, through a fine nozzle, and ignites on coming into contact with the hot air Expansion and chaust follow as for the other I C Es The I C E has a higher thormal efficiency than the petrol engine, 30-36 per cent as against 22-25 per cent, the compression ratio being of the order of the less against a faith which represents the first performance. of 12-16 as against , 6 in the petrolengine It exerts a higher torque at slow speeds the fuel is less casily inflammable and so fire risks are less. The oil is also less volatile and loss through evaporation is insignificant On the other hand, the oil en, me is heavier in weight per heise power, it is not is smooth in running at low load and has not the accelerating characteristics of the petrol engine Of engines are now built for speeds of 1000 2000 r p m whereas petrol engines are J Okill Internal Combustion Inquires, 1922, J Linib, Running and Main 1922, J. Limb, Running and Hain tenance of the Marine Preset Ingine 1939, H. R. Rusido The High Speed Internal Combustion I name 1941, S. J. Young and R. W. Pryer The Itsting I Internal Combustion Ingines 1944, J. T. Vincent, buston Ingines 1911, I T Vincent, Supercharging the Internal Combustion Engine, 1948 H F Wimpers The Internal Confus. Ingin 1949

International Affairs, Hoyal Institute of,

ere Roy vi

International Bank for Reconstruction and Development, was estable by the United Nations Monetary and Financial Conference field at Bietton Woods (see Briggory Woods ACREMINS) USA in July 1914 - Its function is to assist in the reconstruction and development of members by facilit sting the mye tment of capital The authorised capital stock is \$10 million divided into 100 000 equal capital shares available for subscription only by members. An Act giving effect to the Bretton Woods Agreement in the United kingdom was passed in Dec 1915. The bank may operate either by making or participating in direct loans out of its own funds or out of funds trused in the mikt of a member of otherwise borrowell or by guarante ing loans made by private in vestors. The bank consists of a band of ZOVERNOR executive directors who are responsible for the conduct of the bank s general operations a president and staff I times produced affording The first chauman Dr. Hugh Dalton to the study of the progre (Britam) was succeeded in Sept. 1917 by [11] trading development OK Ym (Chm) The UK representa-tives ar Sir Stafford Cripps gover director I W styder is 1 s governor and I ugene Black (provisional charman) oxecutive director. The president and vice president are John McClov and Robert L. Gainer, L. Line staff Robert L. Gainer, U.S. The staff numbers about 13. Its first loan was \$250,000,000 et seq to brance n May its adminstration of him omes business \$250,000,000 et seq to brance n May its adminstration is in the 1917. This was followed in Ang 1914, by three more loans to kuropes \$19 million to the Setherlands, \$10 million to difficult and not be decisions of the million to Luxembourg general and only two small loans were made in 1918—316 million to Chile for hydroelectric development and agric machinery and \$12 million to four Dutch shipping.

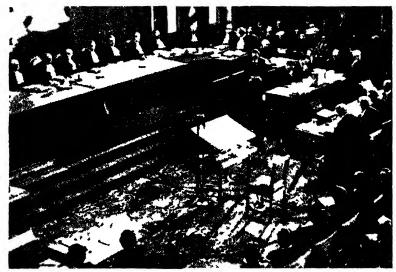
Companies to buy ships in the U.S. In Jan 1949 \$34 million was lent to Mexico and \$75 million to a Brazilian traction, ind \$75 million to a Blazillan traction, light and power company, both Largely for highrofecture schemes. By the end of 1418 the European situation had dismitgrated so far that the Luropean Recovery Plan (L.R.P.) had taken the little of reconstruction loans from the bank as the source of European reconstruction. In the east store of the distruction In the early stages of the dis-ission of the Marshall Plan (see Ect opp. -truction II for i) it was expected that the bank will be able to supplement the I RP at at with leans for specific projects. But is I I P has developed the possibility of on against ant bank leading to burope dra ing the four vegre of the programme has de The dute ultres of divided responsi bility for the financing of Furor can receivery made it unlikely that the hopes enter tuned as recently as 1948 would be real need until the Marshall Plan period was new its end. With one of its original functions (loans for reconstruction) taken over by the Unigo, the bank turned from reconstruction to development. But up to 1/13 it was unable to find as many projects ready for invancing as it would have liked to handle while other projects ing rojects took longer to put into hape thin expected. One detect by in the entire winess of the articles of inference of the bink, which made no provision for technical assistance. For not only were the countries of S. Ameria, parts of After A real the Middle last under developed but they were also so shift if telimerous hat they were unable to free me schemes in such a firm is to make it possible to appruse their prospects without much additional work for which the bank was not equipped

International Bureau of Commercial Statistics was estab in 1913 at Brussels in I was instituted for the purpose of unify ing commercial statistics from all countries with a view to their public tentionally It had noticest is the study of a poorts and exports and the issue of exaplicated th t sh valuable, tables of star ties show n the iditive positions of countries and that productions viewed from nearly cvity conceivable used to An annibul I times produced affording matter relevant to the study of the progress of commercial

International Chamber of Commerce we founded in 1121 it i russels in order to urther the welfare of international tride. Most of the important states are a presented on it. The large of its function of the development of trade to the development of trade. letween nations, the adjustment of him jeing restrictions and, generally, the igamention of him onions business rela Its administration is in the hands if an elected council representative of the illiated nations the decisions of the council are arried out by a socreture general and committee, who are under the supervision of the president. Its meetings take place every two years, when reports are submitted and trade questions dis-cussed. It has London offices at 14 Queen

International Court of Justice, in all methods essentials is the old Perminent Court of develop is International Justice under a new name Its statute which forms part of the Charter of the United Nations (qv) is the Statute of the Permanent Court with a few unimportant changes and contains provisions designed to ensure continuity between the two

It therefore did but little to develop international law I J was constituted during the second Assembly of the League, form illy opened Icb 1, 1922, and held its first session func 1, 1922, in the Icwe Pilace at the Hague The Charter of the Court was founded on the scheme provided by Article II of the Cover and of the League. Take the old court, the new contains of Nations (q t) Some notable cases to different nationalized come before the court were The Wimble elected for a nine year term by simultan consysting in the Security Council and the of Nations (q i) Some notable exists to come before the court were The Wimble don (1921) Adispute between I rince and



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THE INTERNATIONAL COLLEGE DUSTICE

The cere at the Hague of less range 20 1948 when the horal was posted Britain series, must Albania over the more of the Corta Channel level britished to version October 1946

(a ner d Assembly, which in this context | suc ed to the functions of the Council Kill (in il the Maximatis Conces and Assembly of the defunt League of Sions (1)24 20), a case between Greece Statute do contains ons for ifeguirding the Nations The similar provisions for independen cof the judges cg, that they may not exercise any politial or ad ministrative office or practise a profession They are ready able only by a unanunous vote of their own colleagues on the ben h Prior to the First World Wir there had existed a convention for the creation of a permanent court, but it tem un din abev ance because the conference of 1907 could not agre on the method of appointing judges thus the only previous provision for settling international disputes was by thus the only previous provision way of ubitration, a method which, while effective to meet the demands of a particular and momentary situation, lacked the contart and momentary situation of a tribunal proceeding for precedent and may according to precedent and may accord to the contact of th

in, munition, for Poland through the and the it But im relating to concessions in I ale tine, a di puto between Bulgaria and energy and pure between Bulgaria and energy in the Ireaty of Neurlly (1921), and the court also had a long list of netrion opinions to its credit, the most notable height Mosul dispute (1925) between Great Lutain and Lurkey over the Iraq

N bundary (See also Most)
Only states may be parties to the I of I, but though individuals have no direct necess, a State may take up the clum of its national, and in international htigation this is a familiar kind of case As in the Permanent Court, the submission

willingness to recognise the Courts' jurisdiction as compulsory, in relation to any other State accepting the same obligation, whenever a dispute falls under certain heads, the most important being the interpretation of treaties and questions of inter-national law. Under the old Statute national law. Under the old Statute acceptances of this clause were numerous and where these are still in force they are deemed acceptances under the new Statute subject to such reservations as existed previously. But acceptance of the Optional Clause does not create a truly compulsory jurisdiction; it means merely that a State has agreed that in certain circumstances it will allow itself to be sued without the necessity for concluding a special agreement after an actual dispute has arisen. The question of a truly computsory jurisdiction for the Court remains the most controversial issue of its future (Prof. J. L. Brierly). The new Statute expressly states, what was implicit in the old, that the function of the court is to decide the disputes submitted to it in accordance with international law. Conventional language describes disputes which a court can decide as 'justiciable' and those which it cannot as 'non-justiciable,' mis-leading terminalist 'june any dispute is justiciable if the parties choose to make it so, it being for the court to decide whether or no any particular claim is well founded in law. Generally speaking it is evident that political methods of settlement will always be necessary internationally just as they are nationally, and the liveling their particular and the liveling of the liveling that the liveling of the judicial method can never replace them.

The Court itself has no means of enforcing its judgments; but all the members of the United Nations have bound themselves to comply with its judgments, and Article 94 of the Charter provides that if a party fails to obey a judgment against it the Security Council may 'make recommendations or decide upon measures to be taken to give effect to the judgment.' What sort of measures or sanctions the Council could or might put into force and what would be the precise effect of its

decision ' is left uncertain. International Date or Calendar Line, the line where the change of date occurs, is a modification of the 190th meridian, and is drawn so as to include islands of any one group on the same side of the line, or for political reasons. It is indicted by joining up the following nine points:

Latituulc	Longitude	Latitude
60° S.	140,	154° S.
51 l° 8.	180°	5° 8.
45 <u>1</u> ° S.	172 j° W.	18° N.

International Institute of African Languages and Cultures, estab. at a conference beld in London, June 29–30, 1926, to which were invited representatives of some twenty-three scientific, educational and missionary associations in various countries. A draft constitution was adopted for the society, whose first trustees were Sir Frederick Lugard (q.r.), Sir Humphroy Leggett, and Mr. Harold

Godfrey Judd. On the original executive conneil were a number of persons distinguished in African sociology, including Sir Frederick Lugard, C. M. G. Seligman, a distinguished anthropologist, Prof. Levy Bruhl, Rev. Edwin Wm. Smith and others. The objects of the Institute, whose headquarters are at 22 Craven Street, London, W.C. are. to study the languages and cultures of the natives of Africa; give advice and aid in the pub. of studies on African languages, tolklore and native ort; estab a bureau of information for persons interested in linguistic and ethnological interested in linguistic and ethnological re carches and educational work in Africa; ussist in producing an educational literature in the vernacular; encourage international co operation in all questions connected with the mental development and technical advancement of the people of Africa. The Institute pubs, a memoranda on a wide range of topics relating to African social anthropology and linguistics. Its journ. Africa is pub. quarterly.

International Institute of Intellectual Co-operation, see Intellectual OFFRATION

International Labour Organisation. The I. L. O. of the League of Nations arose out of the treaty of Versailles. One of the Irst decisions of the Peace Conference of 1919 was the formation of an Industrial Compassion under the chairmanship of Mr. Samuel Gompers, President of the Amer. Federation of Labour. Their deliberations resulted in Part XIII. of the treaty by which the I. L. O. was set up declaring the following general principles:—(1) That labour should be regarded not merely as an article of commerce: (2) The right of a-sociation by the employed as well as by the employers; (3) The payment to the employed of a wage adequate to maintain a reasonable standard of life, (4) The adoption of an eight hour day or fortyeight hour week; (5) A weekly rest of at least twenty-four hours, including Sunday where possible; (6) The about no of child-labour and the imposition of such limitations on the labour of young tersons as shall permit the continuation of their education and assure their proper physical development; (7) The principle that men and women should receive equal remuneratoo for work of equal value; (8) The stundard set by law in each country with respect to the conditions of labour should have due regard to the equitable economic to atment of all workers lawfully resident

1721° W.	52 \ N.	170° E.
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International Institute of African Langu- | therein : (9) Each state should make pro-

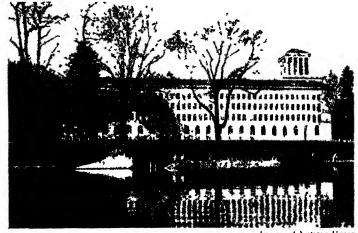
four delegates to the ann Conference, two for the gov., one for the employers, and one for the employed. These delegates are chosen by the gov., with the approval of the predominant organisation of their

respective groups.

The Conference embodies its decisions

The Conference embodies its decisions in three ways a Draft Convention, a Recommendation, or a Resolution; but succe International Law is based on the first two, they are the most important of the three. The first, the Draft Convention, resembles a treaty, and is submitted to the national authority; but it requires for ratification a two-thirds majority and

were adopted between 1919-39. sixty-three countries this teen have not ratified a single convention. Except for the ned a single convention. Except for the Soviet Union, which was a member only for a short time, these countries were of minor industrial importance, but a number of progressive countries have recorded very few ratifications. The U.S.A. have ratified only five, Cunada nine. Australia twelve, Chima thirteen, Cychoslovakla, India, and Switzerland lifteen, and so on the country, have country have attribed more than one. No country has ratified more than one half of the conventions Great Britain ind Spain leading with thirty four more revealing are the statistics showing



League of Nations Union

THE INTERNATIONAL LABOUR OFFICE, GUNEVA

its adoption by the organisation A Resolution consists of a statement of general policy and is clearly of but small practical The Executive Board of Management is the governing body of the I L. O and consists of twenty four members, half being gov delegates and equal numbers of employers and workers representatives. The International Labour Office of

Geneva is the Secretariat

The twenty -ninth Session of the International Labour Conference held in Montreal (1916) discussed constitutional changes which it finally adopted, may profoundly influence the effectiveness of the L. L. O. as a working body and as a means of raising world labour standards. A draft agreement was dance in 2.3. Rations World Research with the United Nations The I L. O. in 1946 had fifty-

in any case it must be brought before the the disparity between the number of con-parliament concerned within a year from ventions voted for by goy delegates but ventions voted for by gov delegates but not patingly by the zovs. These show that the gov deligntes of Crechoslovakia have total for forty six conventions which were not afterwards ratified, those of Denmark forty-three which were not rati-fied, Brazil forty two, Canada and Norway forty, Poland thirty seven, France thirty-Sweden thirty four, and Belgium three The figure for the U.S. was tive thirty three Sixteen and for Great Britain thirteen. The obvious implications of these figures were that delegates were obtaining a reputation for a prosper-live attitude by supporting proposals which the gover they represented had no intention of putting into effect, or that they were not giving suincently serious consideration to the practical implications of the adoption of conventions. There is a considerable difference of view between labour stanrealisms. The 1 L. O. in 1745 had into-two members (as against sixty in 1940, dards in the more advanced countries and ltaly, (sermany and Japan having by them withdrawn) but at one time or another in colonial dependencies. Whether it is safty-three countries have been members sounder policy to adopt conventions and altogether sixty-seven conventions which will be of practical value in western countries but which cannot be expected to source ratification by the less advanced nations, or to adopt lower standards and hope to raise world working standards more nearly to the same level, with the concomitant risk that delegates from the advanced countries will lose interest, is not easy to say. Doubtless much would depend on the state of public opinion in the various countries at the particular moment and the extent to which that opinion can find expression. There are differences of opinion as to whether the changes proposed at the last Conference go far enough: the less practical would like to see the enforcement of conventions made compulsory for all member—an ideal which can hardly be reached before the apotheosis of national sovereignty begins to lose some of its force. But it may be reasonable to hope that in some sort they will make got, delegates consider more carefully the practical implications of their votes and help to turn the mit. of words piled up by the I. I. O. into broad and butter for workers overywhere

bread and butter for workers overywhere' (The Times, Sept. 18, 1946).
Attempts had been made by advanced teformers long 1 fore 1919 to organise labour internationary. Robert Owen was one of the first in Great Britain. Ho unsuccessfully addressed a memorial to a Conference of the Holy Alliance at Aixla-Chapelle in 1818. In 1837 Daniel Legrand, a Lothringian employer, addressed all the European Gova, similarly, Later from 1880 to 1890 Albert de Mun of France, Kopp and Winterer in Germany, Helleputte in Beignum, and Prince Lichtenstein in Austria worked to such purpose that in 1893 Pope Leo XIII, issued his famous Rerum Noranum on 'the Condition of the Working Classes.' In 1897 a great International Labour Conference was held at Zurich, and in 1900 an International Association for Labour Legislation was formed in Patis under the chairmanship of M. Millerand; associated with him was M. Albert Thomas who became the first director of the International Labour Office when it was set up in Genera. The I. L. O. pubs. many documents and periodicules, among them being: The International Labour Information (weekly): Bibliography of Industrial Hygiene; International Labour Information (weekly): Bibliography of Industrial Hygiene; International Labour Informational Labour Informational Labour Information (meekly):

International Law, comprehensive term (coined by Bentham) denoting the sun of those rules of conduct which obtain among modern civilised nations, and which regulate their mutual relations and intercourse. The 'persons' or 'parties' known to I. L. are states, and normally such sovereign independent states as are recognised members of the family of nations (on the nature of the artificial conception of state, see Government, State), or that 'aggregate of states which, as the methan of their historical antecedents, have inherited a common civilisation, and are at a similar level of moral and political opinion' (Prof. Holland). The question how far this international or rather internations and that violation of these state code of morality may appropriately

Directory.

be designated 'law' has formed the subject of an extraordinarily prolific literature. One school of jurists follows the ature. One school of jurists follows the narrow but logical Austinian analysis of law, maintaining that no rule can be a law law, maintaining that no rule can be a law positive unless set by a given sovereign to his subjects and sanctioned by force, and that international 'law,' which must not be confused with the jus gentium (q.v. and see also Equity) of the Roma. is no more than a body of principles, adherence to which on the part of individual states or nations is sanctioned by the fear of war. But another school of publicists and jurists, while not for the most part venturing ducedly to confrovert the Austinian ing duectly to controvert the Austinian analysis, asserts that laws are not neces-sarily sanctioned by force so much as by the play of public opinion, and that the want of an actual authority to enforce observance will not deprive of their legal character rules which men habitually and conscientiously obey without any thought of tear inspired by some controlling authority. The mere fact, however, than no modern civilised state would openly declare its unwillingness to be bound by such rules as have now received the seal of international approval at The Hague con-ferences, and that many have submitted to abtration with at least a show of good grace, does not alter the fact that treaties or conventions are frequently violated and on minimity gained only at the price of fear of superior armaments. In Germany, for some years before the Second World War, some vers before the second word war the tier. Gov. broke treaties without scruple, and dering the war showed that they telt bound by no 'laws' other than those of expediency. The true view would seem to be that positive or muniwould seem to be that positive or mani-cipal law and a rule of international modality have points of resemblance, but differ essentially in point of promulgation and enforcement. There is a similarity from the fact that conformity to each does to a great extent rest upon consent freely given from the recognition of an inherent and sound ethical standard. The juris-prodential aspect of I. L. is nearly sum-marised by Prof. Holland as the 'vanishmarried by Frot. Holland as the Wallistang point of jurisprudence, since it lacks any arbiter of disputed questions, save public opinion, beyond and above the disputant parties themselves, and since, in proportion as it tends to become assimilated to true large by the pergeometries of lated to true law by the aggregation of states into a larger society, it ceases to be itself, and is transmuted into the public law of a federal gov.' An ambitious but ill fated attempt to provide international rules with definite sanctions was made in the sanction clauses of the Covenant of the League of Nations (see COVENANT). The covenant provided a wider sphere of I. L. with a coercive power-net as it had not

by the civil or military authorities of any Power within the jurisdiction of which the pirate may be found. Thus the treaty endeavoured to remove from the sanctions of the laws of war the fatal defects which the First World War made so natent. Experience in the Second World War afforded no evidence of any neutral availing itself of this power. While Britain stood alone, the sole defence against the oceanwide and illegal activities of the Ger. U-boats was the Brit. Navy and its Fleet

Agencies or Sources of International Law. These according to Wheaton, are: (1) These according to vincesin, are, (1) Text writers of authority on the approved usage of nations, such as Avala (q,n.), Grotins (q,n.), Puffendorf, Bynkershoek and Vattel; (2) treaties of peace, alliance, and Vattel; (3) treaties of peace, alliance, of peace of pe and commerce: (3) ordinances of parti-cular states prescribing rules for the conduct of their commissioned cruisers and prize tribunals: (4) the adjudication of international tribunals, such as boards of arbitration and courts of prize; (5) written opinions of official jurists given confidentially to their own gove.; and (6) the hist, of the wars, negotiations, treaties of peace, and other transactions relating to the public intercourse of nations. All these sources are invoked by Wheaton as guiding the modern publicist and states-man in the search for a rule so generally recognised as to amount to a rule of I. I.. Paradoxically enough, though there was until recently next to no written I. L., there has for some considerable time existed an encyclopedic bibliography opinions on the principles underlying its now generally recognised usages. But too much importance must not be attached to the opinions of jurists, because, while some rely upon practice and precedent, or the decisions of a court and the act of a gov., others prefer the theoretical speculations of eminent, predecessors. The latter, however, are in a minority in these days of precedents, though it was otherwise in the days when the works of Grotius. Avala, and a few others were almost the sole source of information. Treaties are the most important source, if we include under that term every from of convention, contract, or declaration made between or ratified by different states. The Declara-tion of Paris, 1856, the Geneva conven-tions of 1861 and 1906, the conventions drawn up by the representatives of most of the leading nations at the various Hague peace conferences have by their combined effect led to the evolution of a tolerably comprehensive body of express I. L. purporting to regulate the usages of war, ameliorating the condition of the sick and wounded in war, whether on land (the Geneva Convention) or at sea (Hague Convention, 1899). There sources have, since the First World War, been considerably supplemented by the provisions of the Treaty of Versailles creating the League of Nations, and by various later agreements arising out of the amendment of the Articles on the Covenant. The convention of July 29, 1899; was an especially epoch-making document, for it represented the agreement of no fewer than twenty-

four states to submit certain disputes to a permanent court of arbitration, an innovation which still further assimilates I. L. to tion which still further assillmates 1.1.2. The law proper. Provision was also made for international commissions of inquiry on disputes 'arising from a difference of opinion on facts', although as to those lastmentioned bodies it was further provided that their reports should leave entire freedom of action to the parties concerned. Such an inquiry was held in the case of the Dogger Bank outrage on Brit. fishing vessels at the time of the Russo-Japanese war. In the express recognition of arbitration as the most efficacious and equitable means of composing differences, it is to be noted that, although most European powers bound themselves to submit to the arbitration tribunal for a period of five years, there is an express condition, 'qu'ils ne mettent en cause ni les intérêts vitaux, etats contractants et qu'ils ne touchent pas aux intérêts des tierces puissances. pas any interest use there's pursanters from the Covenant of the League of Nations, where it is limited by considera-tions of augression. This work of con-solidating or codifying the usages of I. L. and creating a tribunal was supplemented by the Declaration of London (q.v.), which created an International Prize Court of Appeal and further regulated the law of contraband and blockade.

The Subjects and General Principles of International Law. - The subjects or persons of I. L. are normally sovereign and independent states. Sovereignty is a fact depending on nothing else than the objective existence of all the ordinary phenomena of political independence; though such external sovereignty may require recognition by other states to enable the new sovereign state to enter the society of nations. The characteristics or elements of international personality may be sum-marised thus: Every society claiming admission to the law of nations must admission to the law of nations must satisfy the following requirements: (1) It must be represented by a gov. which receives a de facto allegiance from its sub-letts; (2) it must be a sovereign inde-pendent state, though it is not necessary that there should be complete independence (see Lord Finlay in Duff Development Co. v. Kelantan Gor. (1921), A.-C. 797; (3) it must exhibit reasonable promise of durability (internal instability was one reason for delay in the recognition of the U.S.S.R. or Soviet Russia; (4) it must possess definite ters.; and (5) it must be recognised as a member of 'the family of nations.' In the theory of I. L. a state under successive is no different from an individual state in a federal evetern, its subjects being in effect those of the suzeram state. A protectorate oc-cupies an anomalous position midway between an independent sovereign state and a state under suzerainty, for it remains independent and owes no allegiance to its protector, although a part of its rights have been surrendered either tem-

porarily or permanently.

As consequence of the First World War certain ters, ceased to be under the

mandatory representation marked a new and progressive principle in I. L. question of the sovereignty of the man-dated ter, raised juristic difficulties; for it might lie in the League of Nations, in the mandatory state, or in the mandated ter. Class 'A' mandated ters., however, ap-Cass A mandace ters, however, appeared to be largely assimilated to protected states; but 'B' (c.g. Tanganyika Territory) and 'C' (c.g. South West Africa) ters, would appear to await appropriate juristic definition. (See Jurther MANDATES; and also IRAQ; PALLSTINE; SYRIA.) Again, the self-governing dominions of the Brit. Empire occupy, in I. L., a position difficult to define. Before the First World War to define. Before the first World War they had truces of individuality or 'international personality,' in that they had their own comage, their own fug in the shape of a modified Brit, ensign, and they had the right to make treaties independently with foreign states on minor matters like tariffs. The effect of the First World War was to emphasise these previously tentative steps towards international personality; for the Dominions secured separate representation at the Peace Conterence in 1919, and comme original members of the League of Nations, with separate representation on the League Assembly; while Canada, in 1921, was given the right to accredit to the U.S.A. a representative who was to be appointed by the king on the advice of the Canadian gov., and whose duties were to deal with questions between the crown and tho U.S.A. affecting Canada. Also Erre more than ten years ago had a Minister Plenipoten-tury to represent Free State interests in Washington. Today the sev. dominions exchange representatives with a number of foreign govs. (As to the relations inter se of the members of the Brit. Commonwealth of Nations, see under Infernal (ONFERENCE); INTER-IMPERIAL RILLATIONS REPORT.)

Some encroachment on sovereignty seems to be implicit in the right of intervention. The question of peaceful intervention has been brought into prominence by the right; possessed by the League of Nations under the Covenant (q.v.) and under treaties containing Minority Clauses. Jurists do not concur on the precise scope of the right of intervention; but the ten-dency of opinion prior to 1938 was to-wards agreement on the basis of the grounds mentioned in Articles 11 and 15 (6) of the Covenant, the net effect being that the Great Powers of Europe would no longer claim under treaties the right to intervene in the affairs of other European states while there existed in the League of Nations a means to that end. But in 1938 and the immediately succeeding years, the totalitarian technique, as developed by Germany and Italy, reversed this tendency completely and not only intervention but invasion-without-ultimatum be-

tion but invision-without-untilitation became so common that the entire structure of I. L. was threatened.

League of Nations.—The League, called into boing on the ratification, in 1920, of the treaty of Versailles, and by the pro-

sovereignty of the defeated states and were mandated to various powers. The mandatory representation marked a new and progressive principle in I. L. The question of the sovereignty of the nam-dated ter, raised juristic difficulties; for it might lie in the League of Nations, in the inamedatory state, or in the mandatory state, or in the mandatod ter.

1. L. recognises the right of any state to place itself under any form of gov. it may choose, and to regulate its domestic concerns as it will. Again, a state may pursue any commercial or iscal policy and maintain what armaments it may choose without thereby infringing any rule of 1. La, and its judicial tribunals may assert exclusive authority over all persons and things within the ambit of their jurisdiction, whether such persons and things are foreign or not. But in a case of conflict of legal principles in regard to the rights of private individuals, the dictates of international commy may be said to have occasioned the habitual application of the appropriate law to each case (see Comtry). This application of foreign law is sometimes called Private I. L.; but strictly the word 'international' is inapplicable, and the rules and principles relative to the subject will not therefore be further referred to in this article.

It is also an underlying principle of I. L. that whether an independent nation be strong or weak does not affect its right to equality of treatment and respect in all matters directly or indirectly concerning its interests. Included in the ter, of a state are the so-called territorial waters extending for 3 m. out, measuring from low-water mark. It follows also from the general freedom of the high seas that monof-war and other public vessels on the high seas are 'essentially and in every point treated as though they were floating parts of their home state. Included in such to tional parts of foreign ter, are the official residences of diplomatic envoys and ambas. A movement for the recognition of tree navigation on international rivs. set in at the beginning of the ninetcenth century and developed in the case of a number of great European rivs. in conventions between the various riparian states concerned. By the supulations of the Congo Conference at Berlin in 1884-85, the Congo and the Niger are tree, and there is a special international commission called the International Congo Commission to regulate navigation on those rivs.

The detail of 1. L. relates to belligerence, or the rights and duties of states in time of war, neutrality, and the process of the pacific settlement of international disputes by arbitration. In regard to belligerency 1. L. lays down rules for the commencement of hostilities, and for determining 'enemy character,' whother of goods, ships, or persons (see ENEMY); it prescribes the permissible modes of warfare, and provides for the proper treatment of prisoners of war and wounded belligerents, though, in this connection, the policy of 'frightfulness' habitually adopted by the Gers, has involved in its application the abrogation of these rules (see also DEPORTATIONS, SUBMARINE WAR-

FARE, AERIAL WARFARE). Further, it lava down restrictions on the conversion of merchant into war vessels on the high seas, interprets the effect of conquest upon liabilities, and the general operation of treaties, and regularises the practice of pacific blockade. The rights and duties of neutral powers find expression in the rules as to contraband (see DECLARATION OF LONDON), the supply of arms by neutral states, the right of asylum, passage through neutral ter., blockade, and the visit and search of neutral merchantmen. As to what acts on the parts of its subjects a neutral gov. is bound to restrain and what ac's its subjects may do at their peril, the Alabama case showed that there was no clear principle before the award of 1907 as to whether a gov. might acquiesce in the proparation and sale of an armed vessel; the analogy to the principle upon which a gov, incurs no legal responsibility which a gov. incurs no legal responsibility for the supply of guns being very close. Now neutral govs, must use due diligence to prevent the arming or equipment of such vessels within their jurisdiction.

International Law and War Crimes.—

International Law and War Crimes.—

The critics of the Nuremberg judgment of 1946 allege that there is no precedent for establishing the crimes with which the prisoners were tried and imposing the punishment. But the crumes and atrocities committed by the Axis Powers were boyond anything in hist, in regard to both their range and their enormity. They were international in character and therefore to be judged according to the rules of I. L. The killings charged at Nuremberg were killings which the Tribunal held could not be justified under I. L., that is the laws or customs of war. The killing of the laws or customs of war. The killing of hostages, the murder of prisoners of war, the extermination of Jews and others, the slaughter of millions in concentration camps (q.v.) and in occupied countries by manifold means, were all accomplished in flat breach of the Hague and Geneva Conventions. which had been soleninly agreed by all the assembled nations, including the Axis Powers, for the ameliorisation as far as possible of the horrors of war. None of the prisoners at the Nuremberg trial received the death sentence unless he was found guilty of murder, that is on the counts of war crimes (see CRIMES, WAR) or round guilty of murder, that is on the counts of war crimes (see CRIMES, WAR) or crimes against humanity, and the modern laws and enstoms of war—the validity of which cannot be doubted for they date back to Grotius and even earlier. What was to some extent novel was that the heads of the Hitler inner Council were individually indicted and punished for initiating and waging a war of aggression. But those who aver that there is no law against aggressive war ignore the existence of I. L. Since 1919 at least the nations have deliberately sought to outlaw war. Their final pronouncement was the pact of Paris, the Kellogg-Briand Pact of 1928, a most solemn treaty made by sixty-six nations which agreed to renounce war as an instrument of national policy, and the aggressors in the Second World War were among these nations. The Pact was a declaration of I. L. by practically the

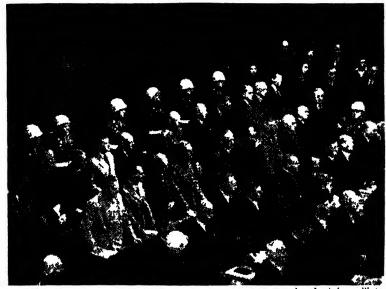
whole of the civilised nations and the Gers. were guilty of a breach of that treaty and of I. L. by initiating and waging war. Hitler and his followers were therefore individually principals in the common plan of breaking that international law and, as the Tribunal said, the crime against peace was the most atroclous crime of all; for it let loose the whole mass crimes of slaughter, terrorism, and cruelty. That was the common plan of crime which the Nuremberg Tribunal condemned and for which they punished the individuals re-sponsible. I. L. for international crines must be found in conventions or treaties like the pact of Paris, which the nations entered into in order to define the I. L. on the point. It was expressly intended to put the matter beyond controversy. The novel and arresting thing is that these declarations were at length put into use. There is thus no ground for describing the decisions of the Nuremberg trial is a post facto law. The trial is a landmark in I. L. It estab. the right of the world to inquire into the acts of military men and into the acts of govs., statesmen, and politicians charged with bringing about a war and with concerted and calculated breaches of treaty and of faith and of the laws of war. See also NUREMBERG TRIAL. Sec F. Bauer. Da Kriegsreibrechen vor Gericht, 1945; R. H. Jackson, The Case Against the Na:i War Criminals, 1946; and I.M.S.O., War Crimes Commission: Law Reports of Trials of War Criminals, 1948.

For detailed reference to the rights and obligations of states in time of peace see AERIAL NAVIGATION-Aerial Laws : AR-BITRATION—International Arbitration; EXTRADITION: EXTRA-TERRITORIALITY; MANDATES; MONROE DOCTRINE; PROTECTORALE; SOVEREIGNTY; etc.; for TECTORALE; SOVEREIGNTY; etc.; for detailed reference to belligerency or the rights and duties of states in time of war, see Belligereants, Rights and Duties of; also Aerial Warpare; Captula-Tions; Cartel; Chemical Warpare; DECLARATION OF LONDON; DECLARATION OF PARIS; EMBARGO; GUTERLLA WAR-FARE; PRIVATEERS; PRIZE OF WAR; REQUISITIONS; REPRISALS; and for rights and duties of neutral powers see BLOCKADE; CONTRABAND; CONVOY; DECLARATION OF LONDON; NEUTRALITY;

Visit and Search.

1917; Sir F Pollock, The Law of Nations, 1922; W. Schuckung, Die Satzung des Valkerbundes kommentiert von II' Schuckung und II II ehberg, 1924, T. Baky, The Canons of International Law, 1931; H. L. Hart, The Buluarks of Peace and International Law, 1931; H. L. Hart, The Buluarks of

(Kriegsbrauch in Landkriege) 1915, A. P. the gigantic borrowing and lending re-linggins, Defensively armed Merchant Ships sorted to by the nations in the First World and Submarine Warfore, 1917, Sir E Saltow, A Chiefe to Diplomatic Practice, 1917; Sir F Pollock, The Law of Nations, 1922; W. Schuckung, Die Satzung des Volkerbundes kommentiert von W Schulck-each All the Central Banks in Europe were invited to subscribe The bank may not issue notes or accept bills of exchange , not in the advances to gove nor operate national Justice. 1933. M O Hudson, for its own account in currencies which do



Var York In . Photos

DELENDANTS AT THE WAR CRIMES HELL AL NURL MBERG 1916 Left to right front row Ge ring Hess Kibbenti op K till sinber, Frank Iri k, Streicher, Funk and Shult Left to right, back ici 1) mitz Kaeder von Schitt h Stilk I Jodl von Papen St. I. uart Speer, vin Neurati and fir h

The World Court, 1921-11, 1934 H Web not berg, Theory and Practice of International the perg, Theory and Fractice of Institutional Policing, 1935. L. Oppenheim Inter-national Lau 1948. A Ross, Fert book of International Lau, 1948.

International Law Private, we Cox FLICT OF LANS International Postal Union, see under

Posr OFFICE

International Settlements, Bank for, commenced operations in the month of May, 1930 If owes its existence to the Young Committee (see Young Play), which sat in Paris from Feb -June, 1929, May, 1930 and was estab. primaril) to furnish a practical and easy means for the final ad-justment and distribution of German reparations and those international debits justment and distribution of German lincks which may be temporarily or reparations and those international debits seasonally weak. (4) assistance in the and credits which remained as a result of organisation of discount mrkts. In coun-

atisfy the practical requirements of old or gold exchange standard. It not may not enter into my banking operation whi h conflicts with the monetary policy of central banks. Any operation proposed by 1 on behalf of the bank on a given mikt may be vetoed by the Central Bank concerned Tle bank schief duties are (I) the maintenance of great liquidity inasmuch as a large portion of the bank a funds constitute the foreign exchange restry of central bank. (2) the transfer of capital to mrkts where it may be needed to counteract a temporary efflux or to kyel out discrepancies in interest rate. (i) the movement of funds in aid of curtries where they may be needed. The headquarters of the bank are in Busel The Control of the Bank is in the hands of a Board of Directors which is composed of Board of Directors which is composed of the governors of the founding Central Banks, exoffice a corresponding number of persons nonmated by them, and the governors of certain other Central Banks selected by the Board During 1939—4) no Board meetings were held and the Bank confined itself to routine functions The Brit directors are Lord (atto and Sir Otto Niemever

International Telephone and Telegraph Company, with main offices in New York City, is one of the biggest of its kind in the City, is one of the biggest of its kind in the world it operates (e.e.) has systems in the Argentine Bi wil, Chile, Cubi, Mexico, Porto Rico, and Unguity Soviets igo with the consent of the Sp. govit bought up all the telephene compunes in Spain up in the treplacine companies in Spain and installed America in whiners and methods. It maintains a telegraph service all over Schmerica and this connects with services in the USA and Luropo. It also has a cable between the USA and Samerica.

Internationale, name given to an inter national association of Labour and Socialist organisations Karl Mars with Engels founded the lirst I in 1864 in London A Second I was estab in 1889 after the demise of the first duc to div be tween Vux and the Russian Bakunin (q1), and in 1912 issued a manifesto calling upon all workers to secure peaceful foreign policies from their gove Among their associates were Stanning Brinting and Ma Donald all of whom be or uning and ha found all or whom became prime munisters of their respective countries. Define the First World Wirmestings were resumed but it was not until 1923 that the second I was completely rejectable. Meanwhile a Third I had been formed at Mescow composed of communist elements who had been ex-cluded from the scoul I It was oftenally founded in [11] by I cain, who proclaimed its aim to be world revolution and who genumely believed such a world revolution to be immunit The various communist parties of each nation receive direct instructions from the Bure in of the Third (Communist) I S & Mus and I I ngels Manifesto of the Communists 1886 Bu harin, Progress of World her dutten 1920 A Toynbee, Surery of International Affairs, 1)21 J Price The International Labour Vincenent, 194) Internationale, L'communist anthem and national anthem of the Soviet Re-public written by Lugenc Pottler in

public ter id 1934) An Lng trans of the opening lines runs. Arise ve starvelings, from your slumber, Arise ve starvelings, from your slumber, Arise, to prisoners of want! I or reason in revolt now thunders and the test data the control of And at last ends the age of cant Now away with all your superstation, Sorvile masses arise, arise! We'll change forthwith the old conditions And spurn the dust to win the prize Then, comrades, come rally And the last fight let us face, human L'Internationale Unites the

race '

Interplanetary Society, British, founded in 1933. Its objects are to promote the development of interplanetary travel and exploration by the study of rocket exploition by the study of rocket engineering astronomy and associated sciences. The Society has over 900 fel-lows and members, including many Brit and foreign workers prominent in these fields. In 19.5 the Society pulp pro-year and designs for a lumit spaceship in the half of the Society that the the light of the information then existing luther recent papers have dealt with expendable tank step rockets atomic rypindible time step forkers from prophision for lockets, and eath stillite stitions. The first Honormy I ellow of the society, elected in 1919 wis Prof. Herminn Oberth noted forket pronect whese stillies initiated the king it technical where stillies in the first stillies. which chents by the Gers in the second World Will The Society is particularly interested in the question of lunar cucum navigate n and landing since these repro sent the first objectives in interplanetary th ht At present the problem of directing rocket to the Moon and obtuning intor mation by telemetering and television is nearing practical solution, but investiga tien of the physiological problems involved before manned rocket flight is possible has still to be undertaken. Also the engineer ing difficulties involved in building a tocket capable of victura journey are immensely more greater than those of a mere mi sile to achieve the one way trip, it is nevertheless believed that they will be over one before the end of the present century

Society does not itself undertake pricted research work in recket pro-pillion and dhed subjects this being discovered by the large governed industrial specifics and rose with centics now estab it which many of its members are empleyed. Its function is rather to act is the learned society for scientists working int i childs to hold lectures and publish material concerned with interplanetary fight and to study the consequences, extending to beyond the purely technical sit i of the conquest of space. For j 1 trivel and spaceships

10 1115

Interpleader When a person finds hunsell in the position of being sucd for the very of money or goods in his posses in in which he claims no interest but to whi h some third person besides the plain till live a clum he is not compelled either to mear the cost of defending the plain till s action or run the risk of an action it the instance of the other claimant by hunding over the property to the plaintiff. His proper course is to take out an I summons under Order LVII (rules of Supremo Court), on the hearing of which the action against him is summarily stopped and the two claimants are made parties to an 1.
1590e This is called a stakeholder's I, and is to be distinguished from a sheriff's The latter case arises when a third per son claims goods which have been solved

by a sheriff under an execution (q, v) for a judgment debt The sheriff's course is to serve an I summons on both the claimant and the executive creditor, and in the case coming on before the master, an issue will

be directed for trial, unless the amount in dispute is under £50, when he will himself summarily dispose of it. Where the master directs an issue, the claimant must of the trial; if he declines the master will make an order for sale (if goods) or payment (if money) to satisfy the judgment creditor's claim. See Cababé, Interpleader.

Interpolation, mathematical process of filling in values intermediate between those given in a set of tables, c.y. the find-ing of log 2765173 from logarithm tables which give only log 2765400 and log 2765500. In most simple cases like the example given, it is sufficiently accurate to use the method known as the method of Thus the tables give: proportional parts.

log 2765100 log 2765500 6 - 1117550 6 - 1417737 .. a difference of 100 is equivalent to 0.0000157 : a difference of 1 is equivalent to 0.0000157

.. a difference of 73 is equivalent to 0.000000157×73 = 0.0000115 to seven places

: log 2765475 - 0:44:7695

A very accurate result may sometimes be obtained from a graph by plotting out the series of tabulated values and then joining up the points by means of a curve as smooth and continuous as possible. This method is especially suitable in many physical examples where the resulting graph takes the form of a well-known curve, and also gives as good a result as we can hope to get in such cases as the estimation of the pop. of a country at some date intermediate between two centuries (see Graphical Methods of Repre-SUNTATION). As a rule, so long as the successive differences vary very slowly, a simple method is good enough, but where simple method is good enough, but where for they are generally directed to the the differences after rapidly (as for exceptioner). The party interrogating is enaughe the differences for 1' as the tangent titled to ask 'anything that can be fairly of an angle approaching 90°) another said to be material to enable non either to

Interpretation Act. Act passed in 1889 repealing and re-enacting Brougham's Act of 1850 for shortening the language used in Acts of Parliament. As to Acts passed after 1500 in the massed line words denoting the mas-culino shall include the feminine, the singular the plural, and that statutory references to the sovereign or crown in Acts of any date shall be construed to refer to the sovereign for the time being in the absence of an apparent contrary intention; and also that where any Act repeals and re-enacts with or without modifications, any provisions of a former Act, references in any other Act to the repealed provisions shall be construed as references to the re-enacted provisions. According to Webster the Brit, dominions by the I. A. of 1889 are forbidden to call themselves colonies.

Interrex (Lat. inter, between, and rex, king), official of anct. Rome, appointed by

the senators on the death of a king to hold the supreme authority in the state during an interregnum, i.e. a vacancy of the throne, or suspension of the usual gov. In anct. Rome an I, was appointed to hold office between the death of a king and the omes between the death of a king and the election of his successor. He held power for five days, and had to belong to the patician party. The first I. appointed named a successor, and sometimes the nonmatton continued to a third and even a fourth. Thus the fiction of personal selection was kept up, held to be essential to the proper transference of the religious power of king or consul.

Interrogatories. In interlocutory proecedings (q.v.) in an action at law, either plaintiff or defendant may apply, as soon a the latter has delivered his statement of defence, to a master in chambers for leave detaice, to a master in chambers for leave to administer I. to his opponent. Before being allowed to deliver I., a sum propor-tioned to the length of the I., but in no case under £5, must be paid into the security for costs account by the party delivering the I. The other party must answer the I. within ten days or such other period as may be allowed. The I. before delivery are submitted to the master, who may disallow all or any lu his discretion. Only such I. will be permitted as appear Only such I, will be permitted as appear to the master necessary for disposing fauly of the case or for saving costs. The object of L is to obtain admission- from the other party with a view to proving one's own case and to ascertain as far as possible the case of the other party. But it is not, at least in theory, permitted to a higant to institute a 'roving commission' of inquiry so as to work up a case out of his diversary's forced admissions or to defend a just cause by a similar process. iclate strictly to the matters or facts in issue (see under EVIDENCE), but, unlike pleadings, are not confined to the material facts upon which the parties intend to rely, method must be resorted to which myolves maintain his own case, or to destroy the more advanced mathematical work from the theory of finite differences.

But he cannot have the names of his opponent's witnesses, nor, indeed, is he entitled to find out on what evidence his opponent proposes to rely to prove his side of the case. used in Acts of Parliament. As to Acts stang this is expressed in the prohibition passed after 1850 the Interpretation Act of dishing? I. There are sev. forms of provides that words denoting the massobjecting to answer L. but generally objections must be by affidavit. The customary objections are on the ground of irrelevancy, that the I. are dshing, that the matter is privileged, and that the contents of a document are asked.

Inter-State Commerce Commission, see

COUNTRICK COURS. Is the name for the distance in pitch between two or more musical sounds. The smallest Is, used in practical music are semitones which, in a keyboard (but not in a string) instrument, have always the same distance in patch between them, and it is the number of tones contained in the I. between two notes of different pitch which determines the 'size' of the I. Is, are primarily divided

into two classes, consonant and dissonant, about 3 ft from the termination of the but the lines of demarcation between the illeum a small pouch (Mechel's divertitive have been very differently fixed. The culum) is occasionally found, and is probtwo nave ocen very differently fixed. The talks considered the unison, octave, fifth, and fourth more perfect than the other Is, in mcdieval treatises is were divided into perfect, medium, and imperfect the unison belonging to the first class, the fourth and fifth to the second, and the thysical the thysical the these or the second. and the third and sixth to the last div into perfect and imperfect is followed by many writers at the present day The simplest classification is one used in Ger many and is on the following system are reckoned upwards inclusively and by number of sames of notes which they contain they are in their normal state when reckoned from the first note of the major scale considered, for the time as the 'tone' Is one semitome less' than 'major' are minor' and one semitone more' than 'major' ire augmented more' than 'major are augmented while is one semitone less than 'minor See INVESTOR are 'diminished'

Intestacy denotes the decen e of a person without having inide a will, or where though a will his been mide it has been either revoked or annulled for irregularity A person so dving is said to have died in testate, and such real property as he may have died posses ed of descends ultimately to his heir in law and his personalty to the next of kin un let the statutes of distribu-tion See Succession Infrance See also Distribution, Statutes of and

INHI RITANCI

Intestina, or Entozoa name formerly given to an order composed of worms which live in the intestines of other animals it included nearly all Metazon as distinguished from Protozoa but has now no technical signification

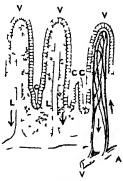
Intestines The I term the portion of the alimentary canal between the stomach

and the anus (q r)

The Small I is a shillty narrowing
tube from 22 to 2; it long and com
mences at the pylorus (n l of the stom
ach and after many convolutions tr
minates in the large I I to copies the
lower and middle part of the abdomen (qr) and is surrounded by the large I. The small I is arbitrarily divided into three portions, viz the duodenum. the about 10 in long and from 14 to 2 in in diametr, 1 the shortest and widest part of the small I it resembles a large C shaped curve its concavity on braving the bead of the innerses. It is not small in the concavity of the small in the concavity of the same of the concavity of the same of the concavity of the same of head of the pancieus It is only partly covered by the pentoncum The middle descending portion of the duodenum receives the common bile duct and pan create du f he jejunum thout 8 to 9 ft in length and 1 in in duncter oc cuples the upper and left part of the ab domen below the subcost at plane It joins the duodonal section on the left side of the vertebral column, and is continued or the verteral column, and is continued into the itum which is about 12 to 14 ft in length and 11 in in diameter. This portion occupies the lower and right part of the abdomen and is highly convoluted. Both the joinum and ileum are attached no length and 1½ in in diameter. This portion occupies the lower and right part of the abdomen and is highly convoluted Both the jejunum and fleum are attached is about i in, below that of the ileum. So far as is known, this appendix is peculiar peritoneum (the mesentery). At a point to man, certain of the higher apes, and to

ileum a small pouch (Mechel's diverti-culum) is occasionally found, and is prob-ably connected with the persistence of a part of the vitelline duct of carly fortal

Large Intestine —This portion of the alimentary canal is > to 6 ft long and ex tends from the leum to the anus It is divided into three parts viz the execum (with the vermiform appendix) the colon, and the rectum Its diameter varies from 21 in in the cocum to 11 in in the lower part of the colon diminishing gradually throughout its length with the exception



VELLICAL SECTION THROUGH A FRAGMENT OI THE SMALL INTESTINE

V V V ar three villa, each coverved by columnu epithelium C, C C are the little tubular plin is (cropts of Lieberk ihn) betw n ti villi which secrete intestinal juice Lanil ar the central lacterls which convey the cl l ii to larger lumphatic ve el with valv ii the subinucous coat. In the villus on their ht the central lacteal is not shown but here the blend vessels are depicted. The cap llary network is immediately under the opith 1 in it originates from a small artery 1 in 1 leids into a small vein V

of the well marked dilatation of the rectim referred to liter the accum is a blind st occupying the right that fossa immediately behind the unterlor wall of the abdoinen and extending some 2 or 3 in, below the the accusal junction. Normally this junction contains the ileo cretal or deo cohe valve, though cases of the absence of this valve have occurred and no inconvenience has been recorded during life The excum is covered by the peri-toneum in front, below, and at the sides. From its posterior and left surface the yermiform appendix protrudes and usually the wombat; but in some animals a presence of minute closely-set protuber-peculiar formation of the distal part of the lances termed villi. Two kinds of small ceeding may represent a condition of the appendix. Its susceptibility to discase has been dealt with the execut is a cone and the appendix is its apox; it is bent appendix is its apox; it is bent appendix is its apox; upon itself to form a 6, and this form may persist throughout life. The colon is sub-divided into four parts: (a) The ascending colon, a portion of the canal about 8 in. long. It is situated in the right lumbar region and ascends vertically to the under surface of the liver. (b) The transverse colon describes a bow-shaped curve, the arch of the colon, and passes across from the right hypochondrium to the left. It is invested by the general peritoneum, which forms a separate fold for it (the transverse meso-colou). (c) The descending colon is continuous with the previous portion by a sudden bend, the splenic flexure, where is situated a remarkable fold of the peritoneum (costo-colic ligament). It dest toneum (costo-colic ligament). It des-conds vertically for about 6 in. to the left iliac fosse, and is usually empty and con-tracted, while the rest of the colon is filled with gas. The peritoneum forms a covering to it only at the front and sides. (d) The sigmoid it were is the narrowest part of the colon. Treves and T. Jonnesco have pointed out the inapplicability of the term 'sigmoid flexure,' and it is now usual to subdivide this portion into the iliac colon and the pelvic colon. The rectum, the lowest portion of the large I., extends to the anne. It belies its name in the human subject as it has a marked concavity forward corresponding to that of the sacrum and coceyx. It is some 8 in. in length and ends in a dilatation (rectal ampulla) which is in contact with the back of the prostate in the male and of the vagina in the female. The peritoneum covers only a portion of the rectum, being reflected down and forming a pouch between the bladder and the rectum in the male, or between the uterus and rectum (pouch of Douglas) in the female.

Structure and Glands of the Intestines. The I. are composed of an external serous or peritoneal coat and three others : muscular, submucous, and mucous. The muscular coat consists of two layers of fibres, a longitudinal and a thicker inner circular set. The progressive contraction of the fibres of the muscular coat produces the peristultic movement by which the contents of the L are forced onwards. The sub-inucous coat of strong loose areolar tissue is connected more firmly with the mucous coat than with the muscular coat. The mucous cost is thick and vascular and consists of: (1) An epithelial layer forming the intestinal glands; (2) a layer of retiform tissue which supports the blood vessels and lacteals, and (3) a thin layer of unstriped muscle (muscularis mucose). In the duodenum and jelmnum the mucous membrane is thrown into a series of closely placed transverse pleats (valvule conniventes). The largest are about 2½ in. long and ½ in. wide at the broadest part and they materially increase the absorbent surface to which the food is exposed. The The mucous coat is thick and vascular and ing the intestinal glands; (2) a layer of rediform tissue which supports the blood worked in the vessels and lacteals, and (3) a thin layer of unstriped muscle (muscularis mucosea). In the duodenum and jejunum the mucous membrane is thrown into a series of closely placed transverse pleats (valvule conniventes). The largest are about 21 in, long and 1 in, wide at the broadest part and they materially increase the absorbent surface to which the food is exposed. The surface to the small I. is velvety, due to the Wagner's operas also begin with an

ances termed villi. Two kinds of small secreting glands are found in the I., viz., the crypts of Lieberkühn and Brunner's glands, the latter being peculiar to the duodenum. Throughout the whole length of the intestinal tract are minute masses of lymphoid tissue (solitary glands). They are especially numerous in the current and are esperanty numerous in the carein and appendix; in the fleum they are collected into large oval patches known as agminated glands or Peyer's patches, the long axes of which, i in. to 4 in. long, are arranged length-ways in that part of the tube need district from the reconstruction. tube most distant from the mesentery

Vessels and Nerres.—All parts of the Larc supplied with a very complete system of blood and lymphatic vessels (lacteals) minutely sub-divided. The nerves of the minutely sub-divided. The nerves of the L are chiefly derived from the superior mesenteric plexus and at first they and their subdivs, cling very closely to the larger arterial vessles; finally they reach the 1, in very numerous branches to be distributed and redistributed in the muscular and sub-mmous coats. See R. Smith, Acute Intestinal Obstruction, 1948.

Intimidation, see THREATS.

Intonation, in music, the opening phrase of any plain-song melody. The term is usually applied to the first two or three notes of a Gregorian psalin-tone, generally sung by one or more selected choristers, or by the officiating priest. Its use is, as a rule, confined to the first verse of the pulin or canticle, though occasionally in the Vagnificat, Benedictus, and Venite the opening phrase of each successive verse is sung in this way to give a greater solem-

Intoning, custom of rendering prayers in the form of a musical recitative, similar to chanting, the greater part of the prayer being recited on one note. It can, however, be varied by the introduction of cerever, be varied by the introduction of certain simple inflections. In eathedrals and larger churches, I greatly simplifies audible utterance. The practice of 1, is undoubtedly of anct. date, and obtains among the great imajority of oarbarous nations, as well as in the Us., Rom., Anglican, and Lutheran churches.

Intoxication, see ALCOHOL, ALCOHOLISM,

and DRUNKENNESS.
Intra, th. of N. Italy in the prov. of
Novara, situated on the W. shore of Lake
Maggiore, about 25 m. N.W. by W. of
Como. There are ironworks, and manufs.

of silk, cotton, and felt. Pop. 7000.
Introduction (It. ultraductione), musical term signifying the preliminary to a following movement. Strictly speaking, it s the piece of music with which an opera opens, and is preceded by the overture, but many composers make it take a more

introduction, and a short one is often prefaced to the second and third acts as well.

Introit, part of a psalm, with antiphon and gloria sung in the Rom. Catholic Church at the beginning of the Mass, as soon as the priest begins the introductory prayers. Other passages of Scripture are sometimes used. The introduction of Is, is ascribed to either Celestine (123) or to Gregory the Great (590). Some of the Is. in the present missal are taken from un-inspired writers.

Intromission, in Scots law, the assuming possession of the property of another either on legal grounds or without authority. I. I. the latter case is contradis-tinguished as vicious. One of the com-monest forms of legal I. is that of an adjudger, or creditor, who has obtained an adjudication by process of diligence against his debtor for the payment out of the rents of his debt and interest. See hell's Comment.

Intrusive Dyke Rocks, see under Ignitotis

ROCKS.

Intuition, in philosophy, a term signifying the mental faculty of spontaneous knowledge of the truth as opposed to its discovery by any ratiocinative process. The concept and word are taken from the terninology of medieval scholasticism. In particular, I. in scholastic theology meant a knowledge of God in the beatific vision. The term 'intuitional,' as used later in the science of othics, is of the first importance in that it denotes a school of thought diametrically opposed to the utilitarian. The intuitionists define the principles and method upon which are to be determined right rules of conduct by reference to a supposed moral sense, or, in other words, duty is to be measured by certain fundamental axioms or intuitively known principles of moral reasoning. The utilitarians, on the other hand, adopt no such subjective standard of good conduct, but estimate the moral value of an act by reference to an objective standard of reference to an objective standard of human duties, whether utility, general happiness (universalistic hedonism), or individual happiness (egoistic hedonism). The authority of the conscence or moral sense as opposed to what may generically be termed the social affections was first advanced, among Eng. philosophers, in a distinct form by Butler in his Dissertation on Virtue, 1739, and carried further by Reid in the Essays on the Active Powers of the Human Mind, 1788. Reid insists on the essential difference between self-love. or regard for one's own good, and sense of duty, or conscience, where Butler seems to have leaned to a belief in their identity in a future life. Whewell in Elements of Morality, 1815 endeavours to formulate a list of intuitive principles exclusive of all regard for happiness and referable to the sole governing principle of conduct, the moral reason. These Is. are compendlously defined as the principles of benevo-lence, justice and truth, purity and order. The introduction into the system of the term 'reasou,' which, as we have seen, is directly antithetical to the primary notion directly antithetical to the primary notion inight, that the lives and property of the of I., connotes merely the supremacy of inhabs, being necessarily at the disposal of reason over purely non-rational impulses the occupant, the inhabs, acknowledged his

or instincts (q.v.) Kant's use of the word Anschauung (literally 'beholding') is Anschauung (literally beholding) is practically equivalent to perception, and he gives as instances of true forms of beholding, time and space. But, regarded subjectively, Kant names such Is. trans-cendental (unknowable), though objectively they are empirically knowable. See A. J. Balfour, Defence of Philosophic doubt, 1920; N. O. Lossky, I. intuition, ta matière et la vie, 1928; K. W. Wild, Intuition, 1938.

Inundations, see FLOODS AND INUNDA-

TIONS.

Intussusception, or Invagination, condition in which one part of the intestine passes into the adjoining portion, tele-scopically, just as the fluger of a glove may on taking it off the hand. The contained portion is nipped and strangled, with the result that all the dangers of hernia (q.v.), but in a much more acute form, are preeent. It is a frequently fatal cause of obstruction of the bowels in children, but is not very common in adults. Surgical treatment is usually imperative. In the early stages a copious enema of oil may restore the normal condition, but the use of purgatives can only make the condition WOrse.

starch-like Inulin $(O_{72}H_{121}O_2)$ stance which is found in dahlia and like tubers, where it forms a reserve food supply. It is coloured yellow by iodine, and is quantitively hydrolysed to the sugar fractose by dilute acids.

Invar, steel alloy, containing 35 per cent of makel and some manganese. Used for

or maker and some manganess. Used for measuring rods and pendulum bars. Invasion. In the theories of the rights conferred by international law (q.t.) on myaders it is necessary to distinguish be-tween military occupation and conquest. Occupation may imply no more than the placing of ter, under the authority of a hostile army by way, as it has been ex-pressed, of sequestration, without any intention of appropriating it. Conquest on the other hand, means acquistion. the such distinction was drawn until the middle of the eighteenth century, with the result that the inhabs, of a ter, in the possession of a foreign army were bound not only to swear allegiance to the invader. but to assist him in all respects as if he were the legitimate sovereign. After the After the Seven Years war juristical writings, notably those of Vattel, began to advance the doctrine that a sovereign does not lose his territorial rights in war until a formal cession at the close of the war by treaty. The prevalent modern theory appears to be that the occupying army merely takes temporary possession for certain purposes, while the sovereignty of the original owner continues for all other purposes. But until recently the practice of belligeren govs. duffered from the theory which presupposes that since the invader is invested with no more than a substituted or quasisovereignty, the national character of the people and soil remain unchanged. The practice is a corollary of the mere rule of sovereignty in consideration of his forgoing the extreme rights vouchsafed by superior force. The question of what acts an occupying army may legitimately do depends on circumstances. The general principle is that everything is prohibited which is not calculated to contribute to success in the military operation con-

cerned.

The articles of the Declaration Brussels prohibit (1) any compulsion of the pop, of occupied ter, to furnish information about the army of the other belliproperty, but without prejudice to the property, but without prejudice to the property, but without prejudice to the right to confiscate by way of punishment or under stress of military necessity; and (4) pillage: and enion (a) the respect of family honours and rights, individual lives and private property, together with religious convictions and liberty, and (b) the general duty of taking all steps to rethe general duty of taking all steps to restab, and ensure, as far as possible, public order and safety, while respecting, unless absolutely prevented, the laws in force in the country (for full information on these points, see Lord Birkenhead's Italy The rights of conquest are, of course, and h wider. Birkenhead defines conquest as the normanent. head defines conquest as the permanent absorption of all or part of the ter, of a defeated enemy, but lays it down that a title by conquest is only complete if the conqueror has the material strength to make his conquest good and has exhibited the intention of appropriation. The effect of the Nuremberg Trial, which followed the Second World War is to give a new juristic conception of I, when all the circumstances estab. that it constitutes the initiating and waging a war of aggression. If this be proved, the invader has no rights at all in international law but, on the contrary, both individuals and bodies responsible for launching such an I. may be tried on the capital charge. See CRIMES, WAR; INTERNATIONAL LAW— International Law and War Crimes; NUREMBERG TRIAL.

Invention, see Patents.
Inventions Board, see under Fisher or KILVERSTONE.

Inventory and Inventory Duty. in regard to the administration of the estates of deceased persons is a list or schedule in which are enumerated all the articles comprising the personal property of the deceased. It also denotes a de-tailed descriptive list of the assets of a bankrupt, and the property comprised in the schedule to a bill of sale on personal effects. The duty of making an I. of a doceased's effects falls upon the executor doceased's effects tails upon the executor (rep. 1500), or administrator, who should make it in Inverkeithing, part, and municipal bor, the presence of at least two of the ereditors of Scotland in Fife co., on the firth of of the deceased or next of kin, or any two forth, 10 m. from Edinburgh. It forms credible persons, and it should describe one of the Dunferuline dist, part, bors, the articles seriatin, with the value at which each has been appraised, especially yard, and there are mills, tanneries, and brickweeks. Pop. 3100. as it may afterwards be admitted as evidence to show what is due to the beneevidence to show what is due to the bene-ficiaries or creditors. But to be admiss-ble as evidence it should on completion be signed and sworn before a commissioner defeat of Arryll by Montroso in 1645.

for oaths. It may be noted that any person interested in the estate may call upon the executor or administrator to exhibit an I., and to render an account of his administration. In Scots law the term I., besides the above applications, is used to denote the schedule made by an heir of the heritable estate of his ancestor with the object of limiting his liability for his ancestor's debts to the amount of the value of the estate so inventoried.

Inveraray, (ap. of Argyll, Scotland, and a Hoval bor., 15 m. N.N.W. of Greenock, on Lock Fvne. Inveraray Castle, the chief seat of the duke of Argyll, lies N.W. of the It was built in 1741 as the seat of the Argyll family, the head of the Campbell clan, and rebuilt in 1889. Pop. 450.
Inverbervie, scapport of Klucardineshire, Scotland, 13 m. N.E. of Montrose. Pop.

2000.

Invercargill, Cap. city of Southland Prov. New Zealand. Area 5911 ac. in-cluding 516 ac. of gardens and reserves. Centre of rich agric, and pastoral dist. The city is well laid out with good buildms. and picturesque suburbs with fine homes and well-kept gardens. The chief industries are frozen meat, wool, butto and cheese, flour-mills, timber, and coal. There are excellent sporting facilities. I. is at the gateway to the wonderful National Park and Fiordland area. The port of 1.

tark and Florando area. The port of l. is at Bluff, 17 m. distont, and handles a large export trade. Pop. 29,000.

Inverelyde, Sir John Burns, first Baron (1829-1901), ship owner, elder son of Sir G. Burns, and eventually succeeded his father in the management of the Cunard Steamship Company. In 1880 or the steamship Company. In 1880, on its conversion into a limited liability company, he was appointed chairman. In 1897 he was raised to the peerage as first Baron Inversigle. His pubs. include: Something about the Cunard Line, The Maplation of Merchant Steamships for Unr Purposes, Glimpses of Glasgow Low Life, and Wild Night, etc.

Inverell, in and railway station of New S. Wales, Australia. It is stuated in tough co., 280 m. N. of Sydney. Silver, in. and diamonds are mined in the neighbourhood, and vines are cultivated. Pop. 1500.

Inveresk, pur. and vil. of Edinburgh, Scotland, situated on the firth of Forth. Manus. paper. The Battle of Pinkie (1517) was fought in the par. Pon.

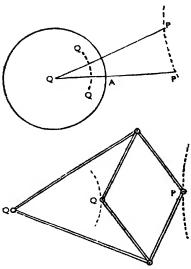
Invergordon, bor, and watering-place of Ro s-shire, Scotland, situated on Crom-uty Firth, with a trade in farm stock and dairy produce. There are dockyards and a pier. I. castle is one in. to the N.W. Pop. 1500.

brickworks. Pop. 3100.

Inverness, municipal bor. and seaport, and co. tn. of Inverness-shire, Scotland, situated at the mouth of the R. Ness at the function of the Beauly and Moray Firths, 108 m. W.N.W. of Abordeen. On account of its beautiful environment and ine buildings, it is the headquarters of an immense tourist traffic throughout the summer. The chief buildings of note are the oathedral, royal academy, and co-hall, and it has a fine suspension bridge, and the famous Clach-na-Cudain, regarded as the tm. palladium. Railway repair works, shipbuilding, iron-founding, dis-tilling, and the manuf, of woollen goods are the production, and the tm. has good roads and a fine harbour and docks. The open spaces of the tn. include Victoria Park, and the famous ground where the most important at thetic event of Scotland, the N. Meeting, is held towards the end of Sept. I. is a tn. of great antiquity, having been one of the Pictish caps. Pop. 24,000.

Inverness-shire, co. in the Highlands of Septential descention for the Meeting of the Pictish caps.

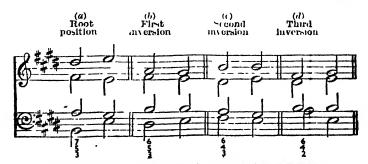
scotland, stretching from the Moray Firth to the Atlantic Ocean. It is the largest co. in Scotland, and includes sev. of the Outer and Inner Hebrides. Covers an area of 4211 sq. m. For the most part it is wild and mountainous, and characterised by the most impressive scenery. of the mts. exceed 3000 ft. in height, and Ben Nevis, the higest mt. in the Brit. Isles, reaches an altitude of 4406 ft. There are a few fertile tracts in some of the glens and by the shores of the sea lochs, and in the N. on both sides of the R. Ness. About 51 per cent of the shire is cultivated, and sheep-farming is extensively carried on. Herring-fi-hing is also an important indusry on the W. coast. The chief branches of industry are rope-making, ship-building, tanning, distilling, brewing, etc. The three great rivs. of I. are the Spey, Ness, and lieutly, and the number of lakes and litters is great Loui Ness below and hill tarns is great. Loch Ness being the most beautiful and best known of the larger lakes. The co., with ('romarty and Ross, returns three members to Parlia-ment. Pop. 34,200. See J. Cameron-Lees, (Laters) the (Language Lees,



O, I ixed centre; P, Moves along given cuive; Q, Iracing point.

the inverse of P with respect to the given the inverse of P with respect to the given circle. If P moves along a given curve, the process of finding the locus of Q (the inverse curve) is called inversion. A simple innged framework of freely jointed rods affords a mechanical construction for the inverse curve. In more advanced work curves are often inverted with re-pert to conic sections.

Inversion, in music, a term applied to chords and intervals when the relative position of the component notes is changed. Perfect intervals remain perfect when inverted, but major, minor, Mistory of the County of Inverness, 1897.
Inversion. If P and Q are two points, such that the rectangle OPOQ = the square on radius OA, then Q is said to be by I, major becomes numer, augmented



THE INVERSION OF THE CHORD OF THE DOMINANT SEVENTH

become diminished, and vice versa in all | has two square roots, three cube roots, and

Invertebrates, collective term for all those animals which agree in not possessing that combination of attributes which make a vertebrate, but have a dorsal nerve chord, a notochord, gill-slits on the pharynx, a ventral heart, and eyes which are out-growths of the central nervous system. The chief groups of 1. are Protozoa (uni-cellular) and the Metazoa (multi-cellular), further divided into Porior sponges; Celentera, unsegnerted worms; Annelids, or segmented worms; Echmoderms; Anthropoda, including Grustaeen, Insecta, and Arachnida; Mollusca.

Invertebrate Embryology, see under EMBRYOLOGY; PROFOZOA.

Invert Sugar, equinolecular mixture of dextrose and levulose (d-glucose, and /fructose), obtained by hydrolysing cane sugar with dilute acids. It readily fer-ments, and is used in the preparation of sparkling wines

Inverurie, municipal burgh of Aberdeenshire, Scotland, 164m. N.W. of Aberdeen. at the confluence of the Urie and Don. forms one of the Elgin group of parl. burghs. Pop. 900.

Investiture, in sendal and eccles, hist., the act of giving possession of a manor, office, or benefit, accompanied by a certain ceremonial such as the delivery of a clod, a banner, more or less designed to signify the power or authority which it is intended to convey. Temporal sovereigns intended to convey. Temporal sovereigns claimed the right of investing the bishops with their sees by the formal presentation which led to the famous 'Investiture Dis-puto' between Henry I, and Anselm in England, and to the bitter struggle between the pope and the emperors of Germany in the eleventh and twelfth centuries. At the Diet of Worms (1122), it was finally decided that the emperor should confer I, by a touch of the sceptre only. thus making no claims to confer spiritual power but merely the temporalities of the

Sco.
'Invincible,' Brit. battle-cruiser (17,250 tons) carrying eight 12-in, guns, which could be dred broad-ide to right or left. She was a unit of Adm. Sturder's squadron which defeated Von Spee's at the Battle of Fulkland 1s. (q, r,) in which she suffered no casualties. The 1, was sunk at the Battle of Jutland (q, r,) where she belonged

to Adm. Hood's squadron.

Invincibles (Int. in, not, and rincibilis, conquerable), members of an Irish secret society, composed of assassins and the worst of the Fenian associations. The main object of the society was the assessination of officials. The chief member was known as No. 1, and each was acquainted with but two others—the member by whom he was nominated, and the one whom he in turn nominated.

Involute and Evolute, see CURVE. mathematical process of Involution, raising a quantity to any power. Its inverse process is evolution, the finding of a root. Whereas a quantity has one square. one cube, and generally one ath power, it weeds, notably Laminaria digitata and L.

generally n nth roots. In algebra, expressions of one term only are dealt with in indices (see Index). For expressions of two or more terms, the binomial theorem and multinomial theorem give formule. In higher geometry the name I. Is given to a series of pairs of points on a line, any pair of which P_1 , P^1 are connected by a relation $OP_1OP^1 - k^2$, where O is the centre and k the radius of the I. If D_1 and D_2 are points given by the relation $OD_1^* - OD_2^* = k^*$, each corresponds to the fland they are known as the double points of the I. If AA^* , BB^* , CC^* be three pairs of corresponding points, the anharmonic ratio of any four, c.g. (ABBAC), is equal to the anharmonic ratio of the four corresponding points viz. of the four corresponding points, vis. (A¹B¹BC). Also (D₁D₂P¹P) form an harmonic range. I. ranges are of two kinds—overlapping, where the radius and the double points are imaginary and O lies between each pair of corresponding points, and non-overlapping, where the radius and double points are real, and any two corresponding points are both on the same side of O.

Inwood, William (c. 1771-1813). Eng. architect and surveyor. In 1821 he planned the new galleries for St. John's church, Westminster; in 1832-13 designed, with his second son, the new Westchurch, nunster Hospital and sev. other London churches. His chief work is St. Paneras New Church (1822), designed after Gk. models by him and his eldest son. He put. Tables for the Purchasing of Estates, annualies, and compound interest (1811).

lo, m (ik. legend, the daughter of Inachus, the first king of Argos. Under the name of Callithyia Io, she was regarded as the first priestess of Hera. She was loved by Zens, who, to protect her from the anger of Hera, transformed her into a white heifer (according to some authorities, the transformation was the work of Hera herself). The hundred-eyed work of Hern ferself). The fundred-eyed agus was then set to watch her, but Zens despatched Hermes to kill but, and lo was released. But Hera's writh pursued her, and tormented by a gad-fly, she wandered all over the earth, till at last she reached Egypt, where she was restored to her original form and became the mother of Epaphus. Eschylus gives a different

or Engines. Asserving gives a university version of this myth in his Prometheus Sec R. Engelman, De Lone, 1868.

Iodio Acid (1110), white crystalline solid, obtained by the oxidation of iodine with concentrated intric acid. On gentle heating it loses water and becomes converted into iodine pentoxide, which on further heating breaks up into its elements. I. A. is acid to htmus, forming salts, the chief lodates of which sodium iodate occurring each in caliche (Chile saltpetre), is the printer in the like of the chile saltpetre, is the printer in the like of the chile saltpetre in the like of the like of the chile saltpetre in the like of the chile saltpetre in the like of the like o or loding.

lodine, (symbol I. atomic number 53. atomic weight 127), non-metallic element which belongs to the balogen group (q.v.). It occurs a iodide in sea-water from which it is collected by certain seastenophylla, which contain as much as 0.5 in water and has strong antisoptic proper cent. It is also prosent in crude (like | posters. It differs from chloroform (q t.)

saltpetre as sodium rod ite

Extraction from Sea used —The weed is buint in pits and the ish or lelp boiled up with water and the solutions concentrated The less soluble wilts separate on cooling whilst the rodid sacmain in solution. The liquor is then distilled with sulphuric icid and manganeso dioxide the I which is evolved being collected in cooled earthen

ware jars

Filraction from Caliebe—The mother liquors from which the sodium intrate has been separated as far as possible treated with a solution of sodium hydrogen sulph to which prompt dos the last black must be substance which is puinted by sublimition. When pure last grouph black enjstalling substance with a metallic lustre and a recultur odom. It has a sp. gr. of and melts under pre-sure at 11°C. On heating it sublime giving rise to a purple vapour. It is only sparingly soluble in water, more freely in alcohol, and e pecially in jot i jum indide solution, forming brown solutions. In carbon disulphide and chloroform the solution is purple. With stirch 1 forms solution is purple. With stirch 1 forms an intense blue coloration, and by means of this test one I are of I in a million parts of water may be detected. Chemically I is the least active of the had-ens but nevertheless combines directly with many metals phospicial etc. and isolobacci tam extra with hydrogen to fain hy directly and its compounds are of great importance. Its solution in alcohol (tineture of I) is used externally for subduing influmnation. The todides of mercury from, and especially potassium are used to increase the activity of the absorbent system generally and in cert un forms of chronic illement ism, in scrofulous iffections mercury and ic d poisoning, (to Compounds of I, such as nodoform (7:) and allied substances, are largely used as introduces silver rodide in the making of photographi plates, and large quantities of I and its compounds are used in technical chem In the form of a complex compound known as thyroxin, I is present in the thyroid Deficiency of I in the dict causes der angement of the general health and appears to be associated with goitre. It is a common modern practice to use table and to which small quantities of iodides have been added, though in most coun tries sufficient indine for the general requicinents of the body is present in nor mal diet. In a few cases lodides are

mai det in a few cases iodides in introduced into the public water supply lodoform, or Tri-lodomethane (CHI_s), pale yellow crystalline substance melting at 1110° (and having a peculiar smell it is best prepared by adding slight excess of a dilute solution of sodium hypochlorite to a soluti n of 50 parts potassium iodide 6 parts a ctorie, and 2 parts sodium hydroxid dissolved in 100 parts water Commercially it is frequently made by an electrolytic method, in which a direct electric current is passed through a warm solution of sodium carbonate, potassium dist and is of W Asia Minor, adjoining iodide, and alcohol. I is slightly soluble the Ægcan Sea. It was inhabited by im-

only in having todine in place of chlorine and in the form of vapour icts as an an esthetic

yellow crystilline substance melting at 140 C which is used as an introduction Tetriodopyrrol ((III)N, plu of iodolorm It is equally effective

but devoid of odour

but devoid of order loss, U.S.A. coscat of Allenco, on the R. Neosho 80 m.S.I. of lopeki. The riv firmshes considerable with power and the in possesses in arterin medicinal mineral well. Pop. 7.00

lolaus, in (k mythology haffaother and charoteer of Hercules with whom ho was was hipped as a hero at flete arled Hercules to destroy the Leincan high and helped Herenles children in then contest with I mystheus when the litter mides u on them

Ion (1) Legendary ancestor of the Ionian branch of the Ck race brought up m Apello's temple at Delphi Turipide takes the stery is the theme of one of his there ine steet is the theme of one of his triggeties (2) Gk poet of Choos hving in the ign of I (ri les) and one of the lesser of Atti triggeties. He fi it Athens be tween 1 0 and 422 hr. His first triggety was prefueed between 1 2 and 419 Be. and he subsequently gimed both the trasic and dithyr unbic prize He is also the reguted author of rightly of head treatie in the my tie number three and is cie lit d with various epigrams perms elemes encomia and concides. He also wrete live historical or biographical works, meluding in 10 ount of the antiquities of Chip Seel Allegre De Ione Chio, 1390

Ions, or Icolmkill, one of the 18 of the mer Hebrides trgyllshire, Scotland, Inner Hebrides Agylishne, Scotland, separate I from Mull by the Sound of I I is at out 4 m long and 14 m broad, and covers a total are 1 of about 2000 ac 600 of whi has under cultivation, oats, potts and barley forming the chief etc. I he coist is furly level on the latter was not be the made support their lives by agriculture and fishing. I is (cl bi ited in hist from its connection with sunt (clumbs, who about 63 I mit I here and founded a monstery which became very famous later is was made the seat of a bishop fater the net tunn ue of interest the most noted being st Oran's (hapol attached to with is a burying ground centaining t.h t mbs of Scottish kings before Mal colm (ininoic and four lish and eight There is also the Muy In 1905, it Norwegijn kings cathedral church of St Muy was restored and opened for public service by the Church of Scotland and the I Conmunity his since restored the mones tery buildings. Pop 200 See A and I Ritchia. Iona Past and Present, 1930

Lucy Menzies, St Columbte of Iona, 1949 Iona, city of Michigan, United States, and the cap of Iona co It is situated on the Grand R, Ji m L of Grand Rapids Pop 7000

migrants from the l'eloponnesus, and he wrote. The I. D. is not very different derived its name from the lonians, one of from Attic, but has a richer vowel-system the anct. tribes of Greece. The country was very flourishing, and out of it arose was very flourishing, and out of it arose twelve great cities: Miletis, Myus, Priene, Ephesus, Colophon, Lebedus, Teos, Erythree Clazomene, and Phocca, to-gether with Samos and Chios, which formed a league more of a sacred than political character. It held a periodic festival in the shrine of Panionium on Mt. Mycale near Priene, when religious worship was observed and games celebrated. Subsequently Smyrna was admitted to the Subsequently Snyrms was animized to the league. The cities gradually fell under the sway of Lydia, but about 550 B.C. became subject to Persia. They became the independent allies of Greece after the Gk. defeat of Persia in 479, but in 387 with other GK, edies again became subject to Persia. They were finally subdued by Alexander the Great after the fall of Miletus (331). I, was included in the Rom, empire after 64 n.c. It was later invaded by Turks and became part of the Turkish empire.

Initial Islands, chain of is, extending along the W, and S, coasts of Greece, and comprising Cephalonia. Corfin, Cythera (Cerigo), Ithaca, Poxo, santa Maura, and maknowledgement of debt. It differs from Zante, with S accounty dependencies. Zante, with State and State dependencies. Total area 1100 sq. m. All the is, except Coreyra were included in the later Rom. Total area 1100 sq. m. All the 1s. except stamp; and it need not be addressed to Coreyra were included in the later Rom. the creditor by name. Tar from being a empire: Corfu and Cephalonia were cap-negotiable instrument like a bill of extured by Robert Guiseard (1081): in 1401, thouge or promissory note, an 1-0 U is Coriu fell into the hands of the Venetiaus, | merely evidence of an account stated bewho extended their sway over the is, but tween the parties to it; but it is not evi-finally ceded them to France (1797). After dence of money lent by the person who coming under the influence of Russia and Turkey they accepted Brit, protectorate (1809-15), which continued to have influence over them until 1864, when they were annexed to Greece under King George. Pop. 260,000.

Ionian School of Philosophy, which ft. during the sixth and lifth centuries B.c. was chiefly interested in the primordial constitutive principle of the universe. The first of them was Thales, his chief suc-cossors being Amerimander and Anaxi-The earlier philosophers sought menes. to explain the material universe in terms of matter and force, finding material substance in everything that exists. About the time of Herachtus a new thought sprang up. Anaxagoras asserted that everything existed from the beginning in an infinite number of infinitesimal atoms which were the seeds of all things which have since been produced. Diogenes of Apollonia claborated on the universal homogeneity of nature, the universal substance of all things being air. The later Ionians, Archelaus and Hippo, reverted to the earlier thought of Thules.

Ionian Sea, in the Mediterranean, lies S. of the Adriatic and divides Italy from Greeco.

lonic Dialect, was one of the four varieties of Ck. language. It was prin-

which gives it a certain softness of sound. Ionic Order of Architecture, see ARCHI-

TECTURE-Hreece.

lonidium, genus of violaceous plants, inhabits tropical and sub-tropical countries, especially America. Sev. species are used medicinally on account of their culcular roots; the chief of these is I. lpecachauha, known as the white Ipeca-cuanna to distinguish it from the true Ipecaemanha of Brazil.

Ionone (C, 11a()), ketone of the ter-ne series. It has a fine odour of violets pene series. It has a fine odour of violets and is used for the production of the arti-

hesal pertume.

Ions, in science the electrically charged particles present in solutions of electrolytes, or in gases subjected to electrical discharges. The term was introduced by Faraday, adopting a suggestion of Whewell. See Electricity, Dissocia-HON,

lorga, Neculai, see JORCA, NICOLAS. los, one of the Cyclades is, of Greece,

signs it.

lowa, N.-central state of the U.S.A., popularly known as the 'Hawkeye State,' covering an area of 56,280 sq. m., 55,986 being land surface. Bounded on the N. by Minnesota; on the S. by Missouri; on the E. by Wisconsin and Illinois; and on the E. by Wisconsin and Illinois; and on the W. by Nebraska and S. Dakota. The surface is undulating, nearly four-fifths comprising rich prairies, forming good pasturage. The soil is generally fertile, the chief crops being Indian our, hay, oats, wheat, barley, and potators i linsed and sorghum are of importance commerall sub-chalts. Among the fruits are apples, About charters, grapes, plums, and strawberries; hought bectroot is cultarated for sugar. The d that state is the richest in arable land in the Umon, and about one-eighth is composed of natural forest—oak, walnut, hickory, pine, cedur, elin, maple, and cotton-wood. In the E. portion of the state minerals abound, including coal, lead, zinc, iron, lancstone, gypsum, clay, sandstone, and gravel. The leading industry is meatpacking; while dary produce, including butter, cheese, and condensed milk, is of great value. Flour-milling and the manuf. or farm implements are important, and wool is a valuable commodity. All the toys, are direct or indirect tribs, of the tonic Dialect, was one of the four tost, are direct or indirect tribs, of the varieties of (4k, language, It was printy Missouri or Missispin, but only a few are cipally spoken in the Ionian colonies of mavigable; there are sev, small lakes in Asia Minor, but was not uncommon in the state. The climate is one of great exsome of the is, of the legean Sea. Out of tremes of heat and cold, generally with a the old Ionic arose the language of epic dry winter and a wet summer. There are poetry. Herodotty distinguished four no very great cities. The negro popy varieties of the New Ionic, in one of which torms a very small percentage and the

foreign-born peoples are mainly of Ger. or 1 Scandinavian origin. Iowa was formerly populated by Indians, but in 1788 the Fr. came to Dubuque to work the lead mines there; they later claimed the state, which was purchased in 1803, settled by a white pop. in 1832, and organised as Iowa Ter. in 1838. It was admitted to the Union as a state in 1846. It is divided into ninety-nine cos., and the cap. is Des Moines, 159,800, other important tas. are: Sioux 159,800, other important this, are: Sloux City, 83,000; Davenport, 66,000; Cedar Rapids, 62,000; Waterloo, 52,000; Dubuque, 41,000; Council Bluffs, 42,000; Ottumwa, 32,000; Mason City, 27,000; Clinton, 27,000; Burlington, 26,000; Fort 1/odge, 23,000; Marshaltown, 20,000. The pop. in 1940 was 2,538,266 (negro 16,694). The Governor and the object of these are above for a town of the chief officers are chosen for a term of two years; legislature consists of a Senate and a House of Representatives. I. sends 2 senators and 8 representatives to Congress. senators and 8 representatives to congress. The College of Agriculture at Ames is the finest of its kind in the U.S. It has over 5000 students. There are over 9800 m. of railway line. See J. Brigham, lova, 1915; I. B. Richman, loway to lowa, 1931; Federal Writer's Project, lova: 1 Assistant the Humber State. 1938; C. Cole. Truide to the Haukeye State, 1935; C. Cole, Iowa Through the Years, 1910; W. J. Petersen, A Reference Guide to Iowa His*tory*, 1912.

Joya City, cap. of Johnson co., Iowa, U.S.A., on the Iowa R., 23 m. from Cedar Rapids. It is the seat of the Iowa State Univ. It has foundries and machine shops. It is a rich farming and stock-breeding dist. Pop. 15,000.

lowa River, rises in Hancock co. in the state of Iowa, and flows in a S.E. direction entering the Mississippi in Louisa co. It is navigable to Iowa City and is about

350 m. in length.

Iowa, State University of, co-educational institution founded in 1817, but not opened until 1855, when the gov. moved from Iowa City, and the old cantol became the Univ. headquarters. Many new buildings were added; the lowe R. flowing at the foot of the campus provides aquatic sports for the students. There are about 6000 students, and the teaching staff is over 500.

Ipecacuanha, emetic substance obtained from the roots of sev. S. Amer. plants. The true I. is a species of Rubiacese known by the various generic names of Cepharlis, Psychotria, and Urogoga, and occurs in damp forests of Brazil. It is a small herbaccous plant with a prostrate stem and an annulated root. In incdicine it acts as an emetic and stomachic, aids respiration, and increases perspiration.
The white I. is a violaceous plant, known botanically as fondium lipeacuanha; the basteri I. is a species of Asclepia-dacear bearing the name Asclepias curassavice. The active principle of true I. is an alkaloid known as emetine, now used in the treatment of anneline discentery. Dover's powder is I. and opium.

Juno sent two serpents to kill Hercules, who strangled them. (2) Was a son of Phylacus and Olymene, whose cattle were famous for their size.

Iphicrates (c. 420-318 B.C.), celebrated Athenian general, the son of a shoemaker. He changed the dress and arms of the Athenian soldiers, and introduced the pellaste (a maragra), or targeteers. These light troops were originally com-posed of Thracian mercenaries. He posed of Thracian mercenaries. Ho fought in the Corinthian War, and defeated the Spartaus in 392. After 371 he assisted his futher-in-law, Cotys, king of Thrace, in war against Athens, but was subsequently pardoned, and took joint command of the Social War.

Iphigenia, according to Gk. tradition, the daughter of Agammemnon and Clythe daughter of Agamemuon had provoked the goddess Artemis (Dana) by killing her favourite hart. When the Gis, were going to the Trojan war Attemis produced a calm, so that the ficet in Aulis was de-tained from sailing. The soothsayer Calchas advised Agamemnon to sacrifice I. in order to appease the goddess, and Agamemnon ultimately consented. cording to one legend she died on the altar; but, according to another. Artems put a hart or a goat in her place at the last moment, and carried her off to Tauris. There I, became priestess in the temple of Artems, and saved her brother Orestes with his friend Pylades from being sacri-field to the goddess by fleeing with them to Greece, carrying away the statue of Artenus from the temple. I. was worshipped in Athens and in Sparta, and it is probable that she was really the goddess under another name. See A. Verrall in Europedes the Rationalist, 1899: F. Ernst, Iphygenia and Andere Essays, 1933.

Ipomea, genus of Convolvularce, consists of about 400 species of herbaceous and shrubby plants growing wild in warm and tropical countries; many are cultivated in milder climates for their showy flowers. I. Balalas is the sweet potato; I. purpurea, the morning-glory; I. pur-ga, the jalap; I. pandurala, the wild

potatovine.

Ipsambul, or Abu-Simbel, ruins in Nubia, Upper Egypt, on the R. Nile. There are two rock temples, which were built by Ramesos the Great, in the sides of steep cliffs. They contain numerous statues and sculptures. See Ecypter statues and sculptures. See EGYPT.

Ipsus, in anct, geography, was a tn. of Phrygia, in Asia Minor, where in 301 B.c., Antigonus was defeated and killed.

Ipswich, municipal, co., and parl, bor, and the co. tn. of Suffolk, England, at the head of the Orwell estuary, 69 m. N. E. of London. I. was once a tn. of narrow anct. streets, jettled lath-and-plaster buildings, and storied inns; but is now a tn. of other parks of the control of the contr tn. of old and new, where Elizabethan oak mingles with fabrications in steel and conan alkaloid known as emetine, now used in the treatment of another dysentery.

Dover's powder' is I. and opium.

Ipsk (Pekia, Peč, or Petch), see Pec.

Iphieles: (1) Son of Amphitryon and Alemene, and twin brother of Hercules.

While the two bables were in a cradle, throughout, with fine oak-panelled rooms and richly decorated cellings; Christ-church Mansion, built between 1548-50 by Edmond Withipoll, with extensive rebuilding in the seventeenth and eighteenth centuries; it is now maintained by the Corporation as a muscum of domestic antiquities, period furniture, and pictures, respectively. Fair, Chicago, Other well-known I, inns some by Gainshorough and Constable: are: the Crown and Anchor' of compress-Corporation as a museum of domestic antiquities, period furniture, and pictures, some by Gainsborough and Constable; Wolsey's Gateway (1528) in College Street, the only fragment remaining of Wolsey's ambitious plan to found a college in I. as a nursery for his Cardinal College at Oxford, with the aid of revenues de-rived from the suppression of monasteries; in 1530 work on his great College of St. Mary came to an abrupt end and the buildings were razed to the ground. The centre of the tn. and of its communal life is the Cornhill. Here are the tn. hall, general post other, and the banks. The tn. hall occupies the site of the old Moot Hall and the general post office that of the Shambles or but bers' mart. The Moot Hall was a ramshackle building with an outside stairway to the upper storey and with the stocks in front and the Market Cross on its right. Some of the streets leading into the Cornhill are narrow, but others have been leved. The main lened. The main thoroughtare comes into the Cornhill and out again and runs by White Horse Hotel. Many of the finest slops are in the Butter Market near the tn. hall. In High Street to the N. is the Corporation Museum which originated in a museum opened (1817) by a society founded for the encouragement of the study of natural last, amongst the working classes. It now includes depts. of general and local natural hist., archaeology, and ethnology.

There are sev. ine churches, mostly Perpendicular in style: St. Margaret's, built in the early inteenth century with supple stone and fint panelled S. porch, embattled clerestory, and oak Tudor hanmer beam roof; St. Peter's, near the site of Wolsey's Ill-lated college, in Decorated style; Ilke St. Margaret's this church suffered much from the reonoclast. Will low-ing; both also suffered exterior damage from air raids; considerable renovation and extension were carried out renovation and extension were carried out in St. Peter's in 1878 under Sir Gilbert Scott; St. Nicholas, with a fourteenth-century nave and aisles of particular interest architecturally. Other churches are St. Mary-le-Tower, the Corporation church in the churchyard of which King John's charter was received in 1199 by the John's charter was reversed in 1950 by the balliffs and burgesse; the church was almost entirely rebuilt in 1860-70 and all that remains of the sixteenth-century structure is the nave piers and arches: St. Mary-at-the-Quay, built or rebuilt about the middle of the fifteenth century;

are: the 'Crown and Anchor' of compara-tively recent date; the 'Coach and Horses' first built as a private residence and only first built as a private residence the cen-becoming an inn in the eighteenth century; the sixteenth-century 'Black Hore'; the Golden Lion in Cornhill; the 'Old Bell,' 'Half Moon,' 'Golden Flecce '-in the yard of which bull-baiting was a popular pastime, and the 'Neptune,' nl-o once a private residence and noted for its carved ceilings and oak-panelled resurved collings and oak-panelled rooms. The first public library of I. was built in 1887. The present Central Library in Northgate Street was built in 1921. It is a noted depository for Suffolk records and has a growing collection of these original converses of social bit. There these original sources of social hist. There are also four branch libraries. There are 9 secondary schools situated in the various dists, of the in., 4 each for boys and girls and the Northgute Grammar Schools, For further education there is a school of technology, the School of Arts and Crafts, the school of Commerce, and Christchurch Exeming College. I. School, which has a continuous hist, from 1477 or even earlier, now ranks as an independent public chool Formerly estab in Blackfrian monastic precincts and elsewhere, the chool moved to its present site in 1851; the foundation stone was hid by the Prince Consort. The general hospitals of I. are the E. Suffolk and I. Hospital and the Bor. General Hospital. 1. has six public parks in addition to many recrea-tion grounds (182 ac.): Christchurch Park and arboretums, a richly wooded park of 70 ac., purchased by the Corporation in 1891, and containing the Christchurch Mansion Museum; Chantry Park and Mansion (124 ac.) presented in 1927 by Sir Arthur Churchman, Bart. (Lord Woodbridge) and opened by Princess Mary in 1925; Bourne Park (76 ac.) also presented in 1927 and opened by Prince Henry (Duke of Gloucester); (Apreswyk Park (15 ac.) opened in 1910; Holy Wells Park and Mansion (61 ac.) also given by Lord Woodbridge and opened in 1936; and Mexandra Park (11 ac.) opened in 1904.
Industries.—The industries of I. in-

clude large engineering and agric, impleclude large engineering and agric, impre-ment works (especially ploughs, tractors, harrows, threshing machines, and lawn-mowers); tobacco: fortdisers; yeast; clothing; artificial sile underwear; boot and shoo manufs: railway plant; and shoe manufs.; railway plant; tanneries; printing works; breweries; railway and flour mills. Among the industrial products are; electrical products—motors and dynamos; industrial products by my constitution of the constraints. about the middle of the fifteenth century; this church, too, was severely damaged by bombs; St. Lawrence, a lefty church in the Perpendicular style built of finit and brick with an embattled tower and 5 medieval bells. Of the L inus which, though they have undergone many architectural changes, have yet stood beneath their same signs for over 4 centuries, the most famous is the "Great White Horse." the transmission on the same site factory plant; steel-framed buildings;

heating radiators and bollers: malicable | 2 members to Parliament, until 1918 when iron and gunmetal fittings and gunmetal | the number was reduced to one. In 1518 and cast iron valves for the heating, oil and sanitary engineering trades: brass and copper base alloys; metallurgical plant for the manuf. of bearings, etc.; cigarettes; letterpress and lithographic printing and stationery; sawing and planing machines; plywood, wall boards and plastics; domestic engineering articles; refrigerating plant; sacks, bags and tarpaulins; garden seats and other garden furniture.

Dock and airport.—Vessels drawing 19 ft. can enter the dock (area 26 ac.) at I. and ships up to 7000 tons can berth at Chir Quay. Following on the passing of the first I. Dock Act, 1837, work on a new dock began in 1839 and, by 1813 I. had the largest wet dock in Great Britain. 1852 the dock commissioners became a corporate body with much increased powers. In 1881 a larger entrance lock was opened and in 1904, 800 ft. of new quay was built. In 1923-2; came a new deep water quay (1800 ft.) on the E. side of the Orwell. The docks and quays are equipped with modern electric cranes and all rail facilities. The airport (opened in 1930) of I. on the E. outskirts of the tn. is one of the flust municipal airports in

the country.

 Anct. relies indicate that I History. was the site of a Brit. settlement 2000 years ago or before the Rom. occupation. Throughout the Saxon period, I. or Gyppeswyk as it is called in the Anglo-Saxon Chronicle, began a steady develop-ment which at length attracted the attention of Dan, marauders. The Danes were defeated at sea off the mouth of the Orwell in 880 by King Alfred; but in 991 and 1000 they invaded and set tire to the tn. and levied a fine of £10,000 upon the inhabs. But these raids do not appear inhabs. But these raids do not appear to have had any lasting effect on the tn., whose port rapidly outgrew those of the rival townships on the E. coast. At the time of the Domesdav Survey I. had as many as 9 churches. In 1199 I. received its first charter, granted by King John (see above) which gave to the inhabs. liberties and privileges they had never previously enjoyed and exempted them from many taxes. By 1280 the traffic through the port was of sufficient vol. to justify the appointment of a collector of justify the appointment of a collector of plastify the appointment of a contector customs. I. was in fact a flourishing port when Hull was still an insignificant vil., and Liverpool merely a swamp. It was at I. that Robert de Beaumont, earl of Leicester, landed with a force of Flemish mercenaries to attack the King's armice near Bury St. Edmunds in 1173. In 1338, the tn. sent 12 ships, in addition to men and supplies, to join the carl of Leicester's fleet before the Battle of Sluys. It was to Edward III. that the tn. owed the introduction of an industry that brought it new prosperity; for he brought over to England 70 families of Walloons, who were weavers and wool-workers, and the woollen industry grow rapidly in Suffolk generally. In 1146 occurred the election of the tn.'s first representatives in Parlialen industry grow rapidly in Suffolk generally. In 146 occurred the election of the tn.'s first representatives in Parliament; from 1446 I. continued to send the Maranon, a branch of the Upper

Henry VIII. granted to the corporation jurisdiction over the Orwell estuary as fur as what is now the port of Harwich. The course of the seventeenth century saw the migration of the woollen industry northward and westward, and by 1650 the trade of I. had declined by one third, but as a set-off the tn. had begun to participate in the profitable coal importing trade be-tween Newcastle and London. More skilled foreign artisans came to I. in the reign of Charles during the religious persecutions of the Huguenots. Shipbuilding became a major industry of the port in the seventeenth century and many E. Indiamen, as well as warships, were launched from its yards. It was still being carried on as late as the middle of the nineteenth century. But the size of the ocean-going ships increased beyond the capacity of the I. yards, so that the in-dustry declined and ultimately disa-appeared. Among the formous names associated with I. that of Wolsey (b. in St. Nicholas Street 1171) is pre-eminent.
Horatio, Lord Nelson, was High Steward
of the bor, from 1800 to 1805. Adm.
Lord Vernon was the tn.'s parl, representative in 1741, 1717, and 1754. Viscount Kitchener of Khartoum and of
Aspall (suffolk) was High Steward, 1909—
16. Thomas, Laushopowerb, and John 16. Thomas Gainsborough and Constable both spent part of their lives in I. Francis Bacon was sev. times member of Parliament for I. Yet other names of Parliament for I. Yet other names are those of Sir Christopher Hatton, after whom Hatton Court is named; Thomas Clarkson, after whom is named Clarkson Street; Thomas Cavendish, the navigator, after whom Cavendish Street is named; David Garrick, who began histage career in I., Jean Ingelow, Rider Haggard, Bernard Barton, the Suffolk poet, and the Rev. Richard Cobbold, author of The History of Margaret Calchpole, 1845. Pop. (estimated, 1917) 101,000. 101,000.

Iquique, city and scaport in Chile, cap. of the prov. of Tarapaca, 820 m. N. of Valparaiso, on the Pacific coast. Owes its commercial importance chiefly to the export of nitrate of soda and borax. Until 1830, when the export of nitrate began, a company a proper of the company I. was only a small fishing vil. of little importance. It is now connected by rail importance. with the inland tn. of Tarapaca and various mining centres and is well pro-vided with trainways, electric light, tele-phones, etc. It was founded in the sixteenth century, upon a peninsula between the Colorado and Cavancha headlands. Twice, in 1868 and 1875, the tn. was nearly destroyed by an carthquake and tidal wave, and in the war between Chile and Pern it was ceded to the former by treaty in 1883. Water is brought to the city from Pica, 60 m. away, a vil. settled by Sp. soldiers in the sixteenth century. Large deposits of guano are found on the coast. The climate is rainless. Pop.

Amazon, 2300 m. from the mouth, and 1268 from Lima. It is a Peruvian flotilla naval base. There is a wireless station and a regular air service. Pop estimated at 20,000.

lquitos, tribe of S. American aborigines, in the region between Peru and Ecuador,

on the N. part of the Upper Amazon. Irak-Ajemi, central prov. of Persia, almost corresponding to the anet. Media. Its surface consists very largely of elevated table-lands, but there are numerous fertile valleys, rich in cereals and fruits, but only partially cultivated. The E. part is occupied by the great salt desert of Dasht-i-Kavir, or Khorassan. 1. com-prises the modern dists, of Kurdistan, Ardelan, Luristan, Ispahan, and Kashan. The prov. contains the prin. ths. of Persia, including Teheran, the cap., and Ispahan. The industries consist in the weaving of carpets, most of which are exported to Europe, and the manuf, of glass and porcelain. Area, 138,190 sq. m. Pop. (estimated) 3,000,000.

Iran, or Eran, originally the name of the great plateau bounded on the N. by the Caspian Sea and Turanian Desert, on the S. by the Persian Gulf and Indian Ocean, on the E. by the line and on the W. by Kurdistan and the Tigris. The name, which is now the official designation of the Persian kingdom, is derived from Aryana, 'the country of the Aryans.' Strabo declared that the name and language extended to the Persians, Medes, Sogdians, and Bactrians, as well as to the inhabs. of the S.E. of I. See Persett.

Irapuato, tn. of Mexico in the state of Guanajuato. It is an important railway junction, and is situated on the rulway between Mexico and Guadalajara. Pop. 29,700.

Iraq (Mesopotamia, 'the land between the rivers '). A kingdom in the Middle E., extending from Kurdistan on the N. and N.E. to the Persan Gulf on the S. and S.E., and from Persia on the E. to Syria and the Arabian Desert on the W., the position being between 374° and 484° E. long., and from 374° to 30° N. lat. The country has an area of 160,600 sq. m. and includes the former Turkish vilayets of Mosul, Bagdad, and Basta.

Mosul, Bagdad, and Basta.
The pop. according to the census of 1945 was 4,611,350. The pop. of the chef liwas is: Bagdad, 1,009,098; Mosul, 553,188; Basra, 400,078; Diwanich, 331,909; Muntafig, 281,617, Arbil, 273,197; Diyala, 269,752; Hilla, 263,837; Kirklek, 262, 209; Amara, 183,944; Kut, 180,145; Sukemani, 175,812; Dulain, 157,616, and Karbala 175,812; 140,356. Dulaim, 157,616, and Karbala, Of a total pop. of 3,560,500 in cto wore 313,600 Moslems; Phristians; 90,900 Jews; and 1935, there were 101,300 Christians; there were 41,100 of other religious.

Physical Features.—I. may be divided into three main divs.: the Plain, the Uplands, and the Highlands. The Plain consists of the delta of the Turis and Euphrates, and extends roughly from the Persian Guif to a line joining Falujah with Khanaqin. The soil is alluvial, and there is no stone. The rivs. run along ground a few ft. higher than the rest of the Plain, Sulalmaniyah and Ranla.

which is consequently liable to be flooded when the rive, are high. This happens each spring when the snows in Kurdistan and Armenia melt, local rain having but small effect on the rivs. The rise of the shiah effect on the rivs. The rise of the Tigris at Bagdad is sometimes as much as 23 ft., and that of the Euphrates as much as 14 ft., at Falujah. At no point is the Plain higher than 150 ft. above sea level. The ann. rainfall on the Plain Newsyng 5 in any and cultivation deaverages 6 in. only, and cultivation de-pends almost entirely on irrigation. There are three chief forms of irrigation: (i.) perenmal, in which form the land is planned and the canals from the riv. to the land to be irrigated are designed in such manner that the water in the riv. will always 'command' the land, or, in other words, flow on to the land; (ii.) from mundation canals, in which form irrigation canals are excavated from the rivs, to the land in such manner that the water, during spring, will command the land, and so give enough water for summer crops—a very unscientific form of crigation; and (ili.) lift irrigation, in which form water is lifted by pump and engine or other mechanical means from the riv. or canals up on to the bank, whence it flows down a small water channel on to lands closely adjoining the enamed on to make cosely autoning the riv. This last form of irrigation has become more popular recently with the cheapening of oil through the development of oil in 1. The chief irrigation works are in the Hindryth Burrage, the Dagharrah Barrage, the Beda Regulator, and the Dialah Weir at Table Mountain. There is a rich date-palm area around There is a rich date-palm area around fasta, and the date trade there is large, 75 per cent of the world's consumption being produced in this area. The Uplands div. forms the area between the Plam and the Highlands, and consists, in the S.W. portion, of an uncultivable gypsum desert, but in the N. and N.E. of rolling oblins with good soil and with a rolling plains with good soil and with a runtiall thrice as heavy as that in the Plain. Mosul, Kirkuk, and Moil, the chief this, are situated on rich soft between 700 and 1200 ft. above the seal vel, the tain being heavy enough tor growing winter cereals extensively. Tho best time to tour these areas is in Apol and May, when the country is very beautiful. There is no irrigation to speak of, though around Arbil and Kirkuk it is carried on in a small way by the anct, system of 'Karez,' a system known in the Middle E, and Alghanistan for centuries. This mode of irrigation is by a series of wells connected by tunnels, the tunnels being skilfully directed, and so inclined as to bring the witer to the surface at the desired spot. The Highlands lie N.F. of a line drawn from Falsh Khabour to Khanaqin, and are crossed by a number of ranges of mts. rising at some points to 14,000 ft. There are many beautiful valleys and plains among those mis., and the valleys are full of flowers. Ramfall is heavy in winter, and may continue till May. The mis. are covered in snow throughout the winter. Fruit is grown in the N., tobacco in the S. Highlands, especially in the dists. of Iragi Tribes — Outside the citic the pop of I is almost entirely tribal, ie divided into communities of Lindred families under their own chiefs or sheikhall it is easy to observe in I the virious stages of tribal development from the nomad of the desert to the riverain cultivator, and in the transit from desert to the (where that has taken place) the tribes have lost little of their tribal characteristics and customs. In the Plan there are Bedouin or Biduin tribes nomadic pastors of canels, sheep and horses others are seminomadic or semi-settled and mush tribes. The three chief I down tribes of I are the shaining between the Figure and Luphrit's in the N-the Dhiffir in the said elsewhere the Arach Blood fouds still prevail and the tribes have their own unwritten codes and inchods of punishing offenders or settling quarters, and the I gov, in its administration in dwelling in black tents remain ent of the time of Abraham while the in a manual passage of the tribe is the citic in the continual he and his family may live in a house.

Constitution and I Immistration — By a

treats of alliance (1330) between Great Butain and I King Laisul ibn Hussain (the first king of I) (ic it Britiin under took to give I su halvice and assistance as might be required without prejudice to Iraqian sovercignty to support the armed forces and tin in es etc of I, and to use its good offices to secure the admission of I to membership of the Leugue of Nations as soon as possible I was admitted to the League of Nations in 1932 I o effect uate this treaty, there was a Brit adviser to each Minister of the Iriquin (abinet, and also a number of Brit officials in each ministry, all being responsible to the I Gov Legislative power is vested in Parliament with the king of I and the Parliament consists of the senate and the The Senate has Chamber of Deputies twenty members or eller statesmen nominated by the king of I and the Lower House 113 deputies elected on the basis of one deputy to every 20 000 male subjects. I is divided into fourteen main administrative divs or liwis each liwibeing administered by a Mutusment being administered by a Mutusairif who is responsible to the Ministry of the Interior but is also the igent and repre Luh sentative of the other ministries administred by a 'Quin Maqquin,' indeath administred by a 'Quin Maqquin,' indeath addhais administered by a 'Yudir' lib Iraq Army—The defence of I during the years following the 1 rest World

The Iraq Army — The defence of I during the years following the I'rst World War was mainly in the hands of the It A I , and see Birt squadrons were stationed in the country. But after 19 2 the R A I command was transferred to Hinadieh, where it is stationed solely to sateguard Brit. inferents. In 1939 the Iraqlan army contained two divs (twenty eight infantry battalions three cavairy regiments, ix batteries of mt. artillery, etc.). The air force comprised two army air cooperation squadrons, one bomber transport squadron, and one fighter squadron.

The total strength of the army and air force was then 28 000 officers and men Compulsory military service for all men between mineteen and twenty five had come into force in 1936. The bulk of the 1 lik and file we shigh taile smen of \$1\$ to but kinds and Inicon ins we enlisted in considerable numbers together with Assiting Chalde in Christian and others also a police force of 10 100 men, half on foot and half mounted. There is also a police force of 10 100 men, half on foot and half mounted. There is a trunctorps which paties and guirsons the W and \$W from the in corporation with twenty wined cars. In certain distanch with one another his done much to so lite gauges of majories in the open and to be imported and proper lite and to bring search and proper lite to the me.

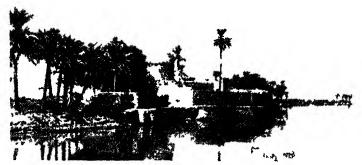
per e and prosports to the area for founds in the large of I du dome there is a Monstry of I du dome there is a Monstry of I du atom staffed by It ages Primary such its incestab in the law is and clementary shoots in the vil. There are about 103 elementary in I primary shoots and 71 see in lary and interinchate schools the chief being at 1 bigdad and Mishi and in tischools have a troop of boy seouts. There is a lower transprofile, es for elementary schools on boy a home arts school for gals, and sever in mageoffices for elementary schools on colleges such as the College of Medicine, and the Linguister ing school of Agriculture, and the Linguister ing school provide specialised course after completion of the socondary courses.

If d al Services—The organisation of modern hospitals a thred by personnel from the Royal Medical College and the Education of the Education o

Aprentium and other Assources—Asheniture is the chief occupation, and yilds the bulk of the revenue Most of the igree pop is engaged in the extensive (e.e. a light imount of with put into a large extent of country) cultivation of wheat and bulky in winter and in sum in rank crops as rice, dites maize, stightum, and sessine. The cultivator class is quite distinct from the pastoral, which latter is the normal Arab. Cotton has been added as a summer crop, and good quality Amor types of cotton give profitable yields. In 1915 there were 1000 as under cotton. The flocks of ship goats, and camels cover enormous are is of green ground, and the desert, after good rains, provides planty of nutritious grases. The oil resources of I are most important, and are fealously regarded by many European Powers. They are developed by two companies—the l'urkish Petroleum Company, and the Khanaqin Company, the latter being a subsidiary of the famous Anglo Persian.

Oil Company. The Turkish Petroleum | vailing N.W. wind acts with the current Company is operating wells under a Concession granted by the I Gov in 1925 An ollficld, 30 m 4 of khanaqin near the Persian funtier, is worked by the Khan-aqin Oil Company The Brit Oil Doyolaqin Oil Company The Brit Oil Development Company (Mosul Oiffelds Ltd) holds a concession for oil covering Iraqi ter W of the Pigus and N of lat. 33°.

so that sailing craft have to be towed upstream, and again, the mys are very shallow in autumn Between Mosul and Bagdad flat bottomed boats and sternwhich steamers carry freight during April and May, and rafts of skins and poles are opment Company (Mosul Officids Ltd.) and May, and rafts of skins and poles are holds a concession for oil covering traging the World of the Figure and N of lat. 33°. The Bassa Petholeum Company hold a stonession for oil covering the southernmost part of the country. Oil production in I averages over 4‡ million to shallow, and salling craft carry the most part of the Company's pipe line, and the product of the Company the product of the



IDI TOMB OF INLA LAMI TREE-

ending at Haifa, and the other at Aleppo local steamers as the as Busia. An imal The clack exports are dates wool gruin to the highest and stars, to tell the Brit. Oversets Airways cotton liquories, and gill nuts, oil will control take an important place in the with 15 A is maintained from Hong future. There is also a large transit trade amounting to the anni value of \$1,00,000, this trade being chiefly with Persia.

Personnet—There are four main radius?

Cransport - There are four main railway transport - The result four main railway lines rath ting from Dadad these terminate at Mi'qil (the port of Basia) at Khaniqin (near the Persian frontur and on the mun rout to Ichean) at Kirkuk, and at Baiji. The khanaqin and Kirkuk, and at Baiji. Kirkuk, ind at 18011 The Khahaqin and Kirkuk routes bi inch apart at Qarughau Junction The Bugdid Basra lim has short branch lines to Karbala and to Nasiryah A standard gaugo lim from Bagdad to Tel Kotch & passes along the p b of the Ligris via Mosul. The main r b of the light of the main Basra-Bhaghad line passes the auct oftics of Ur, Babylon, and Kish, and special rallway facilities exist to enable travellers to visit those cities. The total nulege of track is 950 (See also BADAD RAHWAY) There are some 4800 m of roads and tracks but only 750 m. of metalled track roads, and yet it is possible to motor to almost every part of the country over the amost every part of the founds over the standard many vers interted the Ante-earth roads, cacept the mountainous unites Dept of the Muscum The color-regions and the marshes Riv transport all statues of the scribe gods Nabu and the plays an important part in the life of the winged bulls now in the courtyard were country, but navigation of the rivs. is longht from the palace of Ashur-nasirpal difficult owing to the fact that the pre- if and Shalmanaser, at Calah (Nimrud),

om titl are focal points of im, ortanco mt) them on pilgrimages from Porsia, India and other countries as well as from the Shane of Ali at Next is creeted on historical spot where according to th historical spot where according to the thron halted and rested a camel which had been set lose from Kufah enrying the body of the son in law off the Prophot Ah we tretold, had been killed at prayer in the famous mosque at kifth 6 m distant from Nepal At kifth are the shunes of Hussay and killin o m unstant from regar at killin are the shinnes of Hussain and the Hussain the son of Ali, was, it is tellited slain with his following of 300 men at a battle at keibela.

initial at a battle at Keiners
Intiquities —A valuable collection of
intiquities is housed in the I Museum,
which was erected by the celebrated
certified Lowthian Bell (q v), who organised and for many years directed the Antiquities Dept. of the Museum. The color-

in 1928, and there are, besides, antiquities, appointed High Commissioner with power from the carliest period down to 1700 B.C., the whole illustrative of the continuous hist. of I. These antiquities include painted pottery from Kish (q,v.) and elsewhere; inlaid friezes from Ur and Kish; gold, silver, and copper vessels and weapons from Ur; statues from Adah and weapons from Ur; statues from Adah and weapons from Ur; statues from Adah and other places; ivory combs, toilet boxes, pins, etc. from various sites; terra-cottas and numerous other objects of a fascinat-ing character. At Eridu in S. Iraq, a few miles S. of Ur excavations have revealed a temple dating, perhaps, from about 1000 BC., and a cemetery said to be at least 6000 years old. It is divided into brick compartments pointing S.E. and each of these contained implements ovidently intended for the future life. Other finds nearby included the remains of ten temples at different levels. The lowest of these levels also contained a temple of the fourth millennium B.C., and the highest a Sumerian tower dating from about 2200 в.с.

For the results of archaeological excavation, see BABYLONIA :- Recent discoveries :

History of Iraq since 1914,—In 1914, atter Turkey had declared war on the Allies, a Brt. force was landed at Basra to protect Brit. interests in the Persian gult. The force was not originally included a declared to the Turkey and t tended to drive out the Turks, but, attack being often the most effective means of defence, the force advanced up the Tigris. defence, the force busineed up the Archi-Flushed with their initial success, they advanced too far, and eventually capi-tulated at Kut-al-Amara (see Meso-POTIMIAN FRONT; TOWNSHEND, SIR CHARLES). Reinforcements were then obtained and pushed forward in 1917 under Sir Stanley Mande (4.v.) to recapture Kut, which place, after heavy fighting was occupied by the Brit., who then rapidly pursued the routed Turks. They entered Bogdad on March 11, 1917. Gen. Maude then issued a proclamation to the people telling them that the Brit. had come to liberate them from the Turks: that the Brit, wished the people of I, to regain their past prosperity. Hence in 1921 the Brit, Gov. implemented these 1921 the Brit. Gov. inflictmented these promises, and after election by the people, King Fassal acceded to the throne of L. on Aug. 23, 1921. This was not, however, accomplished without opposition and blood-hed. Annost a welter of conflicting interests—Britain's enemies playing off Indian against Arab—Great Britain announced her acceptance of the mandate for I. under the League of Nations. Meanwhile the Arab Gov. at Damascus had while the Arab Gov. at Dannascus masseneron-ended on the Euphrates boundary, with the result that the tribes N. of Bagdad and around Mosul broke out into revoit. This precipitated a general Arab rising in the Mosul region (1920). Reinforcements arrived, however, and order was ancediby restored in that part of the was speedily restored in that part of the country. The Arab tribes in the middle Euphrates region and around Hillah and

to create a Council of State under an Arab to create a Council of States under the Armore president and an elective assembly, the whole of Central 1, rose in arms, and a body of young troops of the Manchester regiment, numbering about 300, were massacred, and numerous Brit. officials were after marginal or of the property of th were either murdered or made prisoner Troops were rushed from India, many of the leaders of the revolt were deported, and order was gradually re-stored, agutation by the Iraq's being further discouraged by the fact that the Fr. had in the meantime occupied Syria, and so ended the regime there of King Faisal. Sir Percy Cox, having assumed office, myted the Naqib of Bagdad, one of the foremost Arab dignitaries, to form a Provisional Council of State. Soon afterwards it was learned that Fasal was journeying to L. as a candidate for the crown, and after a referendum on the rival claims of himself and Ibn Saud, Faisal was duly problamed elected King. Faisal then called upon the Nagib to form a Cabuet, or rather to continue the administration with the members of his Council. It now seemed to the outside world that 'Great Britain could by down the builden she had hardly yet shouldered ' But, as subsequent events showed, the transformation was as yet merely on paper, and all the work of educating the country into the ethics of western in-stitutions was to come. The years 1921 stitutions was to come. The years 1921 22 were marked by further disturbances, notably on the Kurdish border, in the S.W. of L., and, once again, in the Mosul prov. These disturbances were to a large with which country the Allies were still theoretically in a state of war, and, moreover, Butain had shewn pro-Gk. sym-pathies in the Graeco-Turkish war, 1921-22. Brigandage was rampant, and the desert tribes, particularly the Shammar, were creating further difficulty by seeking of the Saud, the Sultan of Najd. The Shammar were the hereditary foes of Saud, and the latter's forces followed them into I, and attacked the I, camel cops and shepherd tribes not far from the radway between Bagdad and Basra. All this trouble coincided with an agitation by Farsal and his prime minister for the complete abrogation of the But, mandate us being inconsistent with Iraq's sovereign independence. At this time I, wanted a tienty in place of the mundate, whereas Britain was aiming at a treaty within the mandate; so that the difference was purely technical, but the position was complitechnical, but the position was compli-cated by an Arab agitation against oven a treaty relationship. Faisal, however, urged on by this agitation, refused to sign the treaty, with the result that Sir Perry Cox assumed sole authority, and by vigor-ous measures against agitators restored order. This accomplished, a treaty was at length substituted for the mandatory relationship attuners as between Great relationship, although, as between Great Britain and the League of Nations, the mandatory obligation necessarily still sub-sisted. Great Britain undertook to secure Bagdad, including the most turbulent in the country, then agitated against the mandatory obligation necessarily still substit. mandate, and, after the announcement that Sir Percy Cox would be I.'s admission to the League in certain

events, the principle of this policy being the ability of I to defend herself. Even if the I. Nationalists had some cause for if the latest and some cause for raising a charge of breach of fatth against Great Britain in regard to I.'s early admission to the League, the whole situation was obscured by the Turkish menace to Mosul, which prov. the Turks flatly refused to cede, trusting to the sympathy of France. Negotiations between Great Britain and Turkey having failed, an International Commission was appointed by the League to adjudicate on the Mosul boundary. The outcome of these deliberboundary. The outcome of these deliberations was that Mosul was given to Iraq, and in Jan. 1926 a new treaty was accordingly signod between Great Britain and I. extending the period of the previously existing treaty from four to twenty-five years after the ratification of peace with Turkey (see LAUSANNE, TREATY OF), i.e. from Aug. 6, 1921, for twenty-five years, or until such time as I. might be admitted to League membership. In 1932, howto League membership. In 1932, how-ever, the mandatory regime came to an end with L's entry into League memberend with 1.8 entry into League membership. Klug Falsal d. in 1933 and was succeeded by his son Chan, who d in April, 1939, as the result of a motoring accident, and w.s. in his turn, succeeded by his mant son, Falsal II. (b. 1935). I. now reverted to its habitual 1935). 1. now reverted to its habitual regime of intrigue and violence. Already the more enlightened parties of Gen. Nuries-Said Pasha and Yasin Pasha, the Nationalist, had been ousted by the machinations of Hikmel Suleiman and Bakir Sidki, chief of staff, in 1936; but Sidki was assessmated by a soldier in 1938 and his colleague Hikmet resigned in favour of Nori Pasha who now returned favour of Nuri Pasha, who now returned from extle. I., under Nuri, sided with Britain in the Second World War and broke off diplomatic relations with Ger many in accordance with the terms of the alliance. But a dangerous revolt was prepared by Rashid Ali in 1911 in communition

with the Gor. gov.

Revolt in Iraq. - A coup d'état, danger ous in its possible repercussions on Brit ous in its possible repercussions on our interests in the Middlo E., was carried out on April 3, 1941 in Iraq by a group of military leaders, their civilian alines being Sayid Rashid cl Galloni, prime infister, and Haj Anun, the ex-Muft of Palestine, who had led the anti-Brit, revolt in Palestine. tine sev. years previously (see Pausettie) and had fied to Bernt and thence to Iraq. After 1936, when Gen. Bacir Sidky set up a dictatorship, ushered in by Sidky set up a dictatorship, ushered in by the murder of Janur Pasha (q.r.) and terminated by his own usas-sination, military interference became chronic in the political affairs of Iraq. Rashid All tried to give the movement a pan-Arab flavour, but there is no evidence that he had much support in his own or in the neighbouring Arab countries. The lead-

d'état which was fomented by Ger. influence and promises of military aid, was timed to coincide with Germany's attack on Libya and in the Balkans, and, no doubt, to enable Ger. agents to secure con-trol of the Iraqi olificides. For long Germany had been exploiting whatever might be to her advantage in Iraq, and her efforts in this direction were guided, as long pre-viously as 1936, by Herr Grobba, the able,



A YOUNG KURD OF BAGDAD

if unscrupulous, Ger. minister in Bagdad. But apart from Ger. influence and the hostility of the ex-Muffi, the Brit. Goy. had long experienced difficulties with the iraqi Army, which had no particular con-nection with Germany, first over con-scription and then over armanicuts, Germany naturally exploited Iraqi dis-aftection on the armaments question which when the war broke out was still a tumbling block between Britain and Iraq. ther agents gradually succeeded in suborn-ing the services of the four chief army mg the services of the four chief army commanders, who became known as the 'Golden Square.' The most remarkable of these was Salah-ed-Din, commander of the W. Army, who, like the ex-Mufti of Palesime, had once served in the Turk-ien army. But it was Rashid Ali who give his name and political influence to the rebellion, a may who came of one to the rebellion, a man who came of one of the oldest and noblest families of Islam, being a descendant of the eleventh cen-tury saint, Abdul Qudir al Gailani, whose memory is still revered in these regions. Rashid himself was an obscure scion among many sons of a wealthy father and among many sons or a weatons in the Turkish had spent the previous was in the Turkish had service. He art entered the Iraqi cabinet in 1926 as minister of the interior. neighbouring Arab countries. The lead-ers of the movement chose a moment when the Brit. Gov. had their hands full in the Balkans and in Africa and when the Regent, Emir Abdul Ilah, was absent from the cap. By treaty arrangements with Iraq, Britain had acquired bases in the country through which to defend her communications E. and W., and the coup over the It. legation in Bagdad. The fact that Iraq never broke off relations with Italy as she had done with Germany enabled propaganda to be continued by It. and Ger. agents with It. passports, Berlin being the directing force. Rashid's actions were not impired by anglophobia. but were rather the outcome of a gradual drift into hopelessness over any pro-Arab solution of the Pale-tine question (see BALFOUR DECLARATION; PALESTINE) and fear of a Ger. victory in the war Gen. Wavell's great victory in the battle of the W. Desert (see abore) had no effect on the Arab mind in Iraq, the It. as a military race counting for nothing in their military race counting for nothing in their eyes. Thus the rapprochement between Rashid Alı and the Gers. new began seriously to 10 copardize Anglo-Iraq relations. The premier's party, averse from a breach with their traditional ally, Britain, left him, and early in 1911 Rashid, casting about for new friends, joined forces with the Golden Square and tried to force the regent to autount num joined forces with the Golden Square and tried to force the regent to appoint puppets to the cabinet (Jan. 1941). The regent, however, escaped to Diwaniyah where the Army commander was loyal. This earlier crisis achieved little and Rashid Ali went out of office, being succeeded by Gen. Taha el Hashimi. The new prime minister's efforts to dislodge the Golden Square, however, proved ahor tive and while the four remained nothing could be done to dissipate the baneful incould be done to dissipate the baneful influence of the It. legation. In April the Golden Square, aided by Ger. funds, took matters into their own hands and, marching by night into Bagdad, selzed all the key positions. Taha rosigned and the regent again fled, while the young king, Faisal II., was kept a close personer. Amidst these events for Kinahan Corner allies to row Burt on the contract of the contract wallis, the new Brit. ambas, arrived in I and skilfully made use of the rebel gov's superficial attitude of conciliatoriness to effect a peaceful landing of Brit. troops at Basra. But the arrival of still more trans ports soon afterwards precipitated the coup of April 3. The liaqi military leaders, relying on the Ger. military aid which never reached them, now decided to get in the first blow. Without warning they made a second night march across the made a second night march across the Tigris and Euphrates to the Brit. air base in the W and took up positions on the low escarpments at Habbanis ah. Thence they attacked the R.A.F. aerodrome. The R.A.F. at once accepted the challenge and very soon their repeated raids on the military aerodromes of Moascar Rashid and on the Bagdad aliport had resulted in the destruction of most of the Iraqi air force and planes. Rashid All's brief Ger-propped regime tumbled as Brit. troops came within 5 m. of the cap and he blin self fled to Iran with his chief supporters His revolt, in fact, had been premature Meanwhile the regent had returned and exhorted the people to join in the fight against the 'Nazi hirelings who had plunged their country into war. The campaign was short-lived. A Brit. mo-bile column, having overcome the Iraqi positions at Habbaniyah, marched on Bagdad, Khan Buqta fell on May 28

The fact ions with then completely collapsed. I. doclared many ented by It. ittle active participation. Sympathy with the Arabs over the Palestine question was a gradual pro-Arab pro-

syii, and Lebanon, in the invasion of Palestine

See P. S. P. Handcock, Mesopotamian Architology, 1912; R. Koldeway, The Iranations of Babylon, 1914; L. W. King, A History of Babylon, 1919; C. L. Woolley, Dead Towns and Living Men, 1920, the Excarations at Ur and the Hebrau Records, and The Sumerians, 1929; W. A and E. T. A. Wigrisin, The Cradle of Wanlind, 1922; T. Lyell, Ins and Outs of Mesopotamia, 1923, E. S. Stevens, By Iignis and Euphrales, 1923. L. W. King, Sumer and Akkad, 1923, Gertrude Bell, Amurath to Amurath, 1924; R. Coke, The Heart of the Middle East, 1925, D. Mackar, Ancient Cities of Iraq, 1926; R. Coke, Bayhdad, The City of Peace, 1927; S. Smith, Early History of Assyria to 1900 w., 1929; Report on Excanations in Iraq during the Season 1928 20 (Government of Iraq), 1930; E. Main, Iraq from Mandale to Independence, 1935; P. W. Irland, Iraq, A Study in Political Development, 1937, Seton Lloyd, Foundations in the Dust, 1917.

Irawadi, or Irrawaddy, chief riv. of Burna, is formed by the confluence of the two arms of the Malikha and Meh kha, wak h rise in the N.E. of \squam, near the libtatan frontier, a short distance above Bh amo. It follows generally a course from \to 3, a total distance of 1500 in., and falls into the bay of Bongal, between the bis, of Mattapan and Cape Nogras, through a wide delta with nearly a dozen mouths. The delta is a fertile rice-growing dist, but only two of the mouths, the Bisse in and the Rangoon, are navigable for big boats. The chief tribs, are the Chindwin and the Shwell, and the chief tris, on its banks are Bassein, Rangoon, Prome, Ava, Mandalay, and Bhamo. The riv is the great highway for commercial traffic, and drains an area of about 1 15,000 sq. m. of very fertile land. See also Burma, Second World War, Campalons I.

Irbit, tn. in the Sverdlovsk Region of the R.S.F.S.R. at the junction of the Irbit and Nitsa, 110 m. N.E. of Ekaterinburg. It

is connected by steamboat lines with the prin. tns. of the Obi Valley, and has a large ann. fatr in Feb., considered the most important, in Asiatic Russia, and attended

by a number of European and Asiatic merchants. Pop. about 20,000. Ireland, John (b. 1879), Eng. composer, b. at Howden, Cheshire, son of Alexander 1. He was educated at Leeds Grammar School and at the Royal College of Music, studying under Stanford. Began with concerted chamber music and songs. Two violin sonatas followed, and these estab. his reputation at once. His best-known subsequent works are a pignoforte sonata, Mai-Dun, a symphonic rhapsody (1921), and a mano concorto. Has also written a number of songs, one of the best being the setting of Mascfield's Sca Fever, and shorter works for the pianoforte. Other works include the song impression Maragold; the Land of Lost Content, being song

gold; the Land of Lost Content, being song settings to A Shropshre Lad. His work is characterised by its austerity, lyrical beauty and sincerity. See study by R. Hill in A. L. Bacharach's Eritish Music of our Time, 1940.

Ireland, William Henry (1777-1835), forger, inherited the interest of his father, Samuel Ireland not in the works of Shakespeare; but in him it took the form of inventing documents concerning the poet, and imitating his handwriting and signature. The forgeries were so well executed that they deceived, not only Samuel I., but such men as Dr. Parr, Sir Isaac Heard, and Dr. Warton. In-Sir Isaac Heard, and Dr. Warton. couraged by his success I. wrote two plays, Vorligera and Rowna and Henry II., which he ascribed to Shakespeare. The former was produced by Sheridan at Driny Lane in March 1796. Malone exposed the frand, which the perpetrator acknow-ledged in his Authentic Account, 1796. This was expanded (1805) into his Con-

fessions. fessions.

Ireland, is. lying to the W. of Great
Britain. It is separated from Great
Britain on the E. by the N. Channel
(134 m. wide) and the Irish Sea (130 m.),
and on the S. by St. George's Channel (47
to 69 m.). It is encircled on the N., the
W., and the S. by the Atlantic Ocean. In
shape the is. is an irregular rhombold, the
Greatest diagonal from N.E. to S.W. greatest diagonal, from N.E. to S.W., being 302 m. in length. The total area is 32,605 sq. m. 1. is divided into two states,

32,003 et in.

N. Ireland and the Republic of I. (Eiro), the former being part of the United Kingdom.

Climate.—The climate of I. resembles that of Great Britain, but is more equable. It is influenced by the Gulf Stream and by the S.W. winds. The prevailing winds off the ocean cause a greater amount of rainfall, and the rain is more evenly dis-tributed over I. than over Great Britain. In the latter country the mts. in the W. present a burrier to the S.W. winds; but I. has no mt. ridge lying N. and S., which fact accounts for the more equal rainfall. The constant rain promotes luxuriant vegetation, which has given I. its name of 'Emerald Isle.' The nean temp. in Jan. is seldom below 40°, while in July the extreme mean temp. are 58° in the N. and 60° inland.

Area and Population.—According to the census of 1946, the following are the areas and pop. of the provs., cos., and co. bors. of the Republic. The names of the caps, appear in parenthesis :-

PROVINCES, COUNTILE AND COUNTY BOROUGHS	AREA IN STATUTE ACRES	POPULA- TION
Prov. of Leinster Carlow (Carlow) Dublin Co. Dublin Co. Bor. Kildare (Naas)	221,185 208,984 18,740 418,644	34,048 635,876 506,635 61,834
Kilkenny (Kil- kenny) . Leix (Marybor-	509,170	66,683
ough Longford (Long-	421,892	49,634
ford) Louth (Dundalk) Neuth (Trim)	257,935 202,814 577,824	36,221 66,135 66,220
Offaly (Tulla- more	493,636	53,614
We tmeath (Mul- bngar)	435,605	51,980
Wexford (Wex- ford) Wicklow (Wick-	581,061	91,704
low)	500,250	60,310
Total of Lemster	4,851,340	1,280,219
Prov. of Munster Clare (Ennis) Cork County Cork Co. Bor. Kerry (Traleo)	787,756 1,840,908 2,685 1,161,705	85,071 343,243 75,361 133,818
Limerick /Limerick) Limerick Co. Bor. Tipperary Waterford Co.	661,585 2,386 1,051,292 452,840	142,480 42,987 135,981 76,157
Waterford Co. Bor.	1,438	28,332
Total of Munster	5,962,595	916,750
Prov. of Connaught Galway (Galway) Leitrim (Carrick on Shannon).	1,467,660 376,764	165,196 44,578
Mayo (Castlebar) Roscommon	1,333,941	148,200
(Roscommon) Sigo (Sigo)	603,540 113,917	72,511 62,331
Total of Connaught	1,230,822	492,861
Prov. of Ulster (part of) ('avan (Cavan) .	467,162	70,323
Donegal (Lifford) Monaghan (Monaghan)	1,193,581	136,136 57,208
Total of Ulste.	1.979,728	263,667
Total for Eiro	17.024.485	203,007 2,953,452

The following are the areas and population of the cos, and co bors of N Ireland, according to the census of 1937

COUNTIES AND COUNTY BOROUGHS	AREA IN STATUTI ACRES	TIO 4
Antrim (Antrim)	702 900	197 266
Armagh (Armagh)	312 767	108 815
Belfast Co Bor .	15,259	438,056
Down (1)0Wh	609,0 >7	210,687
patrick,	000,071	210,001
(Luniskillen) .	417,912	J1,569
Londonderry		
(Londonderry) .	ა12,ა80	94,92,
Londonderry		
Co Bor	2 198	47 513
Tyrone (Omagh) .	779,518	127 86
Total for N Ireland	300221	1.279.745

Physical Geography—There are no dominating mt ranges in I but there are detached groups of ints generally reaching from the coast inland. I he highest elevation is some 3000 ft, while the average height of the is is shout 400 ft. The chief ranges are the Mourners in co Down with as highest peak shove Donard (2796 ft.), the Wicklow Mts. (Lugna quilla, 3039 ft.), the Derriveagh Mts. in the N. W. (Errigal 2466 ft.), the Sperrins in the N. (Exrigal 2466 ft.), the Sperrins in the N. (Exrigal 2406 ft.), the Sperrins in the Silgo and Galway. The citar 1 part of 1 consists of a wide plain about 2.00 ft. in elevation, in which are many morasses. The largest of these is the Bog of Alku in Leinster They are not unhealthy, and produce large quantities of peat, which is used by the inhab for ind. The lakes of the R. Shannon flows through Allen Ree, and Derg. Neagh, the largest (100 000 ac.), and Frae are in Ulster, to the N. Wile Melvin, Gill, Cana and Conn, and between the cos. Mayo and Galway, the great Loughs Masks and Corrib The Lakes of Killarney in Munster are renowned for their beautiful stiling.

I. is watered by many rive. The chief is the Shannon, the largest riv. in the United Kingdom. It rises in co Cavan and flow in a S.W direction into the Atlantic Ocean. The rive flowing to the W. are for the most part short and rapid and of little use for navigation, the only other important one is the Erne, which empties itself into Donegal Bay. Along the E. coast the prin rive are the Sianey, of the cause has been attributed line of the emigration of the poorer tilluge. The chief green crops grown are other important one is the Erne, which empties itself into Donegal Bay. Along the E. coast the prin rive are the Sianey, cliude bailey, outs, and wheat, and flax is flowing from the Wicklow Mts. into Wex-

ford harbour the Avoca the Liffey, tising in Wicklow and flowing northwards to Dublin Bay, the Boyne draining the central plain, and passing through co Meath into Drogheds Bay and the I agan, itsing in co Down and dischaiging into Belfast Lough The rive of the N and the Bunn and the Loyle the former draming Lough Neagh and the latter emptying itself and the waters of its many small tribs into Lough Loyic The SE list is watered by the Nore Barrow and sur, which unite in Waterford barbour Suir, which unite in Waterford harbour of the rimportant live of the S coast are the Blackwater, rising in Kerry and flowing in an eight retion to Cappoquin, where it suddenly turns S into Youghah hibeur the Lee, flowing through Cork into Cork harbour, and the Bandon, which emplies itself into Kinsale harbour. The coast line of the N W, and S is very much broken up with inlets loughs, and live The N coast of Antinn and lond inderry consists of sheer chiffs, with miny regular columns of basaltic forma tion in luding those known as the famous (nant a (augew iv I he chief inlets of the Varie I oughs I oyle and Swilly and on the W the bays of Donegal and Sign Free Malin Head the most northerly point westwirds and southwards, the coat is finged with many small is, the chief I later being Fory Is and Aran Is the border close upon the cardown to the past giving singred and wild appear the largest rilets of the W are ance Chw I w Killary harbour Kilkicran Bay, to I w Bay, the mouth of the Shannon, Dink Bay and the mouth of keninare R in Burty Bay 1 rom N to 4 aro the is of limbheas Achill Ar in, and Valentia. It is coust not so much fretted as the is and W contains the fine harbours of Cuk and Waterford. The E coast is still mor uniform in Churater but is broken by Wexford harbour Dublin Bay Dun-duk Bay Carlingfort I lough, Dundium By Strangford Lough and Belfast Len halo the Whies Rathlin Is in the \ (hunnel

igneulture—The soil of I is rich and cm nontly suited to tillage, but political trulles have retarded agric development. Then unber of small holdings allotted has been nordinately large and the average size of each extremely small. Moreover, the excessive moisture of the atmosphere in th. S and W region is dotrimental to the cultivation of ecreal crops. In 1899 as lept of agriculture was estab whose dures include the provision of agric instruction, as well as administrative work with regard to the improvement of lives to k. Much of the land formerly used for tillage has been withdrawn gradually during the fifty years 1880 1930 for pasturage. The cause has been attributed infectly to the emigration of the power classes resulting in a dearth of labour, but in more recent years there has been strong effort to increase the area under tillage. The chief green crops grown are potatoes, turnips, carrots, mangel wurzel, beet, cabbage, etc. the cereal crops in clude barley, onts, and wheat, and flax is grown in large quantities in Ulster. With

the increase of pasturage, there has been a much larger return of live stock with a

smaller output of agric. produce.

Agric. policy in kire has fluctuated in the past seventeen years. Until 1932 when the de Valera Gov. took office, the policy was to specialise in the production of live-stock and live-stock products. The area under corn crops declined from a maximum of 1,456,000 ac, in 1918 to 760,000 in 1932. But the output of storeh tons of corn, root and green crops, and hay fell only from 2,761,000 tons in 1918 to 2,410,000 in 1931. Meanwhile the area under grass had increased as the area under the plough diminished. In 1932 the official policy was to speed the plough at all costs and encourage, by a system of guaranteed prices and import restrictions, the growing of food crops for domestic consumption, especially wheat and beet. But total agric, output, after a temporary spurt, began to show a down-ward trend and in 1938 was only 98 per cent of its volume in 1929. In the late 1930's the gov. found that its effort to promote a tillage economy, based on a declining animal husbandry, was disintegrating Eirc's national economy as a whole and destroy of the natural fertility of the soil. But the outbreak of the Second World War made it impossible to apply the lessons learnt. Eire was com-pelled by external circumstences to plouch up an increasing acreage of pasture land in order to obtain a grain supply, the total of which failed to increase in equal proportion and was always inadequate. million ac. of pasture land were sacrificed in the process. Inevitably the output of milk and cattle suffered. In 1929-1930 Eire exported 51.4 per cent of total agric. output, consisting almost entirely of live stock and live stock products. In 1942-43 the percentage exported was only 23.5 per cent. In 1912 a committee was appointed to report on the measures best calculated to provide for the agric. Industry at the end of the emergency period. The majority report of the committee, pub. in 1945, recommended a policy of key farming, a blend of plough specific and there is now substantial agreement bethere is now substitutian agreement between the gov. and opposition parties on this policy. Meanwhile the new grass policy is rapidly increasing the output of grass, fresh and preserved, and it seems likely that there will not be enough eattle nety that there will not be unugar extractional method of preserving grass for winter keep, sliage making is rapidly gaining ground. Mechanisation in Eire is making progress. Until 1939 Irish agriculture was comparatively little mechanised and was comparatively little mechanised and the state of the sta until 1932 hardly at all. In 1939 there were 2067 tractors available; in 1948 there were 9781 tractors, and the number is rapidly growing. A number of cream-ories in the S. of I. have bought farms which they run on a commercial basis. They equip them in the most modern way and the machines they own can be hired out to members as well as used on the common farm.

with great success, and during recent years there has been a marked improvement in the purity of the breeds raised. The lisheries form an important industry of the Irish people. In kire in 1946, 3 steam vessels, 576 motor, 761 sail, and 2120 row boats were employed in the trade. The total crews amounted to 10,162 men and boys in 1945. Mackerel, bake berring sale cod lobsters and hake, herring, solo, cod, lobsters, and ovalers are among the fish caught and sold. There is, too, a good deal of rod- and linetishing in the rivs., and salmon and trout are cought in large quantities.

About twenty-one species of mammals that occur in Great Britain are unknown in I. The mole, weasel, and pole-rat are unknown, and the only kind of reptile found is the lizard. The blue-hare is indigenous, and frogs and toads are very common. It is probable that I. was isolated before the complete European launa was able to enter it from the E The flora of the S. region includes some Pre-nean types that are not found in

Great Britain.

The nineral produce of I. is small when compared with that of Great Britain Cosl is mined near Lough Allen and at Cost is, in co. Tyrone. Black marble is quarred in counties Galway and Kilkenny and a counties Galway and Kilkenny and a counties Galway and Kilkenny and red marble near Cork. Salt is made, being raised from the Triassic beds near carrickfergus, and barges, pyrites, and lead ore are also produced. Other university are limestone, which is chiefly found in co. Roscommon, iron ore, sand, clay, bauxite, and green Connemara murble.

Manufactures flourish chiefly in the N.E. of Ulster. The most important seat of the linen industry is Belfast, where it was introduced by Strafford in 1633 That tu. also employs about 40,000 men in engineering and shipbuilding. in engineering and shipbuilding. The was mobiled industry, which at one time was in a very flourishing condition, was later hampered by restrictions imposed by the little Parliament. Other industries are brewing and distilling, embroidering, hand Inc. work, and other home industries. The chief exports are all kinds of agric. pro-

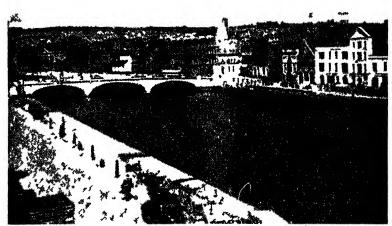
duce, live stock, fish, and linen.

Communications.—The first railway
was opened in 1831, and ran between
Dublin and Kingstown, a distance of 6 m. There are 741 m. of rulway in N. I. and 28.4 m. In the Republe. The canals are ters important for commercial purposes. The chief are the Grand and Royal, 208 and 96 m. long respectively, which afford communication between Dublin and the shannon; and the Ulster Canal which connects Lough Nearl, with the Shannon. There are 180 m. of canals in N. I. and in the Republic 650 m, of inland waterways. the Republic 650 m, or minim waterways, here are mail steamship services between Dublin and Holyhead; Belfast and Hey-sham, Fleetwood, Liverpool, and Ardro-an; Larne and Stammaer; Rosslare also Waterford) and Fishguard. Many Amer. imers call at Cobb (Queenstown) for Cork d the machines they own can be hired on the S., and others at Belfast, London-to members as well as used on the derry or Moville on the N. The coasting mmon farm.

Horses, cattle, sheep, and swine are bred (Rineanna), 15 m. W. of Limerick, is an trains and from the U.S.A., Canada (read Britain and the Continent A daily service to and from Dublin is operated Dublin airport situated at Collinatown, m. N. of Dublin, serves the cross Channel and Luropean services operated

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important land plane junction on the main (Trinity College) was incorporated in 1591, transatlantic air route, catering for traffic and is the most important in I it has to and from the USA, Canada Great now opened its degrees to women The now opened its degrees to women The other univs are the National Univ of I at Dublin , the (Rom) Catholic Univ of Dublin airport situated at Collinstown, I at Dublin the unive of Cork and Gal I m N of Dublin, serves the cross that the General Assembly a College, Channel and Lucyean services operated Biffst and Magee College, Londonderry by Aer Lingus (Irish Airlines Ltd.) and (both Presbyttman) and the Rom



Irish Lourist As ociation

THE RIVER ICL AF CORK

continental airlines continental airtines in chollowing private aerodromes are also licensed Weston Airport 9 m W of Dublin, Dunmore East, 10 m S E of Waterford, Coonagh, 2 m W of Limerick Orannote, m F of Galway, Manot Kilbride, 16 m S W of Dublin

I ducation —In N I there are 1727 elementary schools, 75 secondary schools, to technical schools, and one university, Queens University, Belfast In hire there are 5212 elementary schools (elementary education is free and 12 given in the national schools and, since 1922 the Irish language has been included as an essintial part of the curriculum for all national schools)

There are 329 recognitions and the curriculum for all national schools.

The following private (atholic colleges at Maynooth, Blackrock, so licensed Weston () inhife, Carlow, etc. Climbiffe, Carlow, etc.

History -The earliest hist of I is not unnaturally wrapped up in myth and legend We have little cyldence in any authors of note regarding I, and factors which contribute greatly to the hist of other nations are lacking here, hence we are compelled by the little we have to rely upon the probabilities suggested by research Fyidence of the inhabitation of the fittence of the innamestion of the Neolithic peoples indicates that even after the Celtic settlement of I great rumipers of the carlier inhab survived, and intermarriage between the Celtic and pre Celtic tribes took place to an even greater extent than was oustomary in the land actified by Celta. The first national schools, increase are 323 recog even greater excell than was customary nised and state inspected secondary in other lands sctiled by Celts The first schools, all receiving grants from the State, and open to inspection by the Fdu during the sixth century 8 c, and about the prin this. The Univ of Dublin Celtic settlement of Brythones. Ptolemy, during the sixth century BC, and about three centuries later we find a further

who gives us our earliest knowledge of I., states the names of at least sixteen tribes. These names bear a striking resemblance to the tribal names of the Celts in Britain, e.g. we find the name Brigantes in both countries. The div. of the country into provs.—Ulster, Munster (E. and W.). Leinster, and Connaught—seems to have been made by the earliest Coltic settlers.

By the beginning of the Christian era we may say that I. was populated by Celts (Goidels and Brythones), together with a sprinkling of the Neolithic people and some Picts, who probably came from Scotland, and who occupied but a small portion of the country. Such is the explanation that hist, gives of the early settlement of I. The Irish, however, account for it in a very different way—a series of legendary stories, in which mythical characters, who have become almost historical, play an important part. According to legend, the first invaders came under Partolan, occupied the is, for 300 years, and were then killed off by a great plague. They were followed by the Nemodians, who came from Scythla and had a great struggle with the Fomorians. The Fomorians were ultimately successful and the Nomedians were driven out and went away to Greece. From hence, after various adventures they returned to 1., this time being given the name of Firbolgs, and this tribe settled in I. and have been held to be represented there down to the sixteenth century. The next set of invaders were the tribes of the God Dann, who finally overthrew both the Firbolgs and the Formorlans The tribes of the God Danu are supposed to have come originally from Greece but to have been driven up to Scandinavia, and from thence to have invaded I.; they held supreme command of I. down to the time of the arrival of the Milesians. The Milesians are supposed to Milesians. The Milesians are supposed to have come originally from Scythla, to have sojourned in Egypt, and to have finally invaded I. and conquered it. This myth is historically the most important since the Milesians are held by historians of the sixteenth century to have given the line of the high kings to I. down to the twelfth century. Names are given to the early kings and records of their deeds were kept, but of these we may take little or no notice until the appearance at the end of the fourth and beginning of the fifth cen-turies of Niall of the Nine Hostages. He is held to have finally set up the central kingdom of Tara, and to have led expeditions of the Irish overseas. It has not yet been fully recognised to what an extent I, and Wales were connected during this oarly period, and it must be pointed out here that the expeditions of Niall of the Nine Table State Connected that the expeditions of Niall of the Nine Table State Connected that the expeditions of Niall of the Nine Table State Connected that the state of the Nine Table State Connected that the state of the Nine Table State Connected that the State Co Hostages synchronise with the departure of the Rous, and the raids of the Picts and Scots into Britain. Certain it is that colonies of the Irish were formed in Wales and in W. Wales (Devon and Cornwall), and it is to this period in Irish hist, that we can best trace the foundation of these colonies.

historian and abbot of Clonmacnoise in the eleventh century, as heralding the dawn of Irish hist. It may be said, generally, that Irish hist. is reliable as to genealogies and the broad features of the prin. events from the Christian era and that it is fairly reliable, from a remote period, as a guide to such outstanding events as the foundation of Emania and the victory of Labraidhe (Lowry), grandson of Laoghaire over the usurper Cofley at Dinn Riogh on the Barrow. It is, however, not until the time of Patrick that there are definite political subdives that there are definite political sub-divs. in I as distinct from the mere supremacy of certain families in various parts of the country. A short time prior to the Chris-tian era the most powerful kings in I. were those who ruled in Emania. Thus to Tunthal is attributed the foundation of the kingdom of Meath and the great dynasty of Tara, which governed the clans of the open plain from the sea to the Shannon and later appointed branches to rule over those of more than half of Ireland. There were two other dynastics the origin of which is assigned to the second century: the Leinster and Mun-ster, whose kings were rivals of Conn, famous grandson of Tuathal; and the three leading dynastics supplied the independent rulers of all parts of I. except Ulaidh (Ulster) for centuries and struggled with each other for the supremacy of the country. Tara reached its zenith in the country. Tara reached its zenith in the regn of Cormac MacAirt, a grandson of Conn, who is one of the prin. figures in the copious literature on the exploits of the Fianna or 'Fennans'. The kings of Tara had attained such power in the fourth century that they were then waging war in Britain and oven sending military expeditions to the Continent. The Rom. dominion was on the wane and the Gaels came over to make common cause with the enslaved Britons and Picts against the the custaven bruoms and Piets against the flows. One of the most famous leaders of these expeditions was Niell, king of Tarn, whom we have mentioned above, who was eventually slain on the banks of the Loire (A.D. 405). During Niall's reign his two half-bruthers Braan and Flachra estab. themselves in the palace of Crunchan in Resconnent, and thences ('ruachan (in Roscommon) and thenceforth the kings of the W. kingdom were chosen exclusively from their descendants. Other new kingdoms were founded in the N.W. near the site of the modern Derry. The state of Oriel was also founded at this time It had been wre-ted shortly before the Christian era from the Clanna Rury, the most powerful kings in I. Their sway extended from Ulaidh and in early times spread over nearly all the N. and as far S. as Taillte in Meath; but following the seven years' war between Connor and Maeve of Connacht, in alliance with Fergus of the Red Branch, the power of the Clanna Rury steadily declined.

Immodiately before the introduction of christanity we find the permanent estab. of four kingdoms ruled over by the posterity of Conn — Tara, Oirghialla, Aileach, The foundation of Emania, c. 300 s.c., and Cruachan. The normal head of this seat of the kings of the line of Ir in the N. confederacy is the chief king in kire, is regarded by Tigherneach, the famous styled High King, a purely nominal title

but implying a superiority which was not Centuries before the Christian era, they recognised by the dynasties of Ulaidh, are said to have estab, a Fels or central Laighin, or Caiseal (Ulster, Leinster, and parliament which assembled triennially at recognised by the dynasties of Ulaidh, Laighin, or Caiseal (Ulster, Leinster, and Cashel). These seven independent States into which the is, was divided at this time remained—albeit modified under changing conditions—the spheres of political in-fluence in I. until the whole Gaelic fabric was destroyed at the battle of Kinsule in 1603; but to trace the fortunes of these seven dynastics is the purpose of any hist of Gaelic Ireland. Their supremacy in their own kingdoms remained permanent and the rivairies which often convulsed them were between competitors of their own families. It is possible that Christi-anity conduced to this political stability. The traditional Five Provinces (Ulaidh, Connacht, Laighin, and the two Mumha) are popularly supposed to be represented by the modern four provs.; but the repreby the modern four provs.; but the representation is not wholly accurate. The first div. into four provs. was eccles, when the Synod of Kells (1152) grouped the Church around the arch-dioceses of Armagh, Cashel, Tuam, and Dublin. The creation of prov. 'presidents' in the sixteenth century by the Tudors gave them definite recognition in nolitical effuris definite recognition in political affairs. The accepted index to the internal political constitution of these Irish states is the 'Book of Rights' (Leabhar na g-Ceart) traditionally ascribed to St. Benignus, disciple and successor of St. Patrick.

The religion of early I. cannot be easily traced. The inhab, appear to have had many gods, in fact, to a certain degree, to have been pantheistic; there is evidence also to show that they were fire worshippers, and we know that right up to the fifteenth century the sacred fire at Kildare was kept burning. The most tangible side of the belief of the early Irish, however, is their undoubting faith in the existence of fairies. The tribes of the God Danu are held, after the invasion the God Danu are neid, after the invasion by the Milesians, to have disappeared into the hills and to have reappeared as fairles. We have also lists of the names of the Irish gods, but these gods seem to have been very shadowy beings concerning whom little is known. The priests or druids of the country play an important part as teachers, prophets, and wizards. Their powers were great, and it was supposed that they were able to nesform posed that they were able to perform miracles. One side of the belief of the Irish must not be overlocked here, since it survived for some very considerable time during the Christian period, and that is the idea that after death certain changes could be made by the dead person, and that he could appear new see wolf and that he could appear now as a wolf, now as a fish, and again as a bird. Only certain people were held to have this power, but in one case at least it was held that all the inhab, of Ossorv could change themselves into wolves at will.

Irish historians aver that the country had reached a high state of civilisation at the coming of St. Patrick. The Irish Milesians are described as a martial and cultured people who, in an age when most of Europe was still in an uncivilised state, held their Ollembs, poets and historians, in equal reverence with their royal chiefs.

the Ard Righ's or High King's court on the Hill of Tara. Thither came the Files or poets, the Seanchuldhes or chroniclers, the Ollumbs or teachers, the Brehons or judges, the druids or priests (considered by some to have been rather magicians and teachers than priests), and the chief-tains and kings of the various tribes, to approve or amend the old laws, make new laws, dispense justice, and to record their annals. The laws made in anot. I., known to-day as the Brehon laws were, for that remote period, so wonderfully just, wise, and equitable, as to win the admiration of modern law students. Again, the beautifully wrought brooches and other ornaments of the I. of pagan days, still extant and preserved in Irish museums, reveal their progress in art and

refinement in dress.
Some of the Irish are said to have been Christians when St. Patrick arrived in 432, but it is a fallacy to suppose that the country had been partly converted before then. Christianity had already been the official religion of the Rom. Empire for a century, the Irish and Roms, had for a long time been in close contact, both commercially and in warfare, there was a con-stant influx of Brit, slaves and continuous stant influx of Brit, slaves and continuous intercourse between the Brit. and the Irish: from all of which it is reasonable to suppose that Christianity was known and practised among the Irish before the coming of St. Patrick. Some of the Irish saints, such as Ailbe of Emly, Declan of Ardmore and others, are said to have been Christians when St. Patrick came, and to have submitted to Aim. But the number of Christians in I. then must have been small, and there was no organised Christian church before the time of St. Patrick. The relations between I. and Britain were very intimate. A Brit. Christian Church had certainly been founded long before this date. The growth of Pelagianism in Britain had, before the end of the lifth century, made before the end of the fifth century, made It be essary for Rome to send missionaries to stamp out the heresy, and one of these missionaries, Palladius, was certainly sent missionaries, Palladius, was certainly sent to I. Christianity, however, whilst probably well known in the S., had made little progress In the N. and W., hence it was to these parts that Patrick gave his own personal attention. He himself, born in Britain, had been englayed and had spent seven years of early manhood amongst the Irish, hence he was familiar with their He took with him at least two followers who spent their time in the S., spreading the gospel and organising the churches. Patrick took for himself those parts which had been touched but little by the Christian time time to the churches. had been bouched but little by the Christian faith. His success was great, but has probably been overrated; in any case he found great opposition, and he allowed numberless practices which did not actually run counter to the doctrines of Christianity, but which had been accepted by the Irish in pre-Christian days. The system of scalety made it exempted the system of society made it essential that

he should convert the heads of the tribes before the faith was accepted by the tribespeople, and he succeeded in establishing a system by which native Irishmen became pricets and in turn converted their brethren. Schools and churches were erected, and the see of Armagh estab. I, in this way became definitely connected with the W. Church. Bishops were consecrated, the land divided into diocess which probably coincided with tribal divs, and the Church definitely estab. throughout the land. The Church was, however, during the centuries which followed, to adopt a very different system from that set up by Patrick. The Irish Church has to a very great extent be in regarded as a monastic church, but this was certainly not the system set up by St. Patrick. The Church was founded on practically a personal basis, religious colonnes originating from one centre be amo and remained daughter settlements of the parent body. The head of a religious foundation was the possessor both of spiritual and temporal rights, and frequently it came to pass that the headship of a religious foundation

rne nead of a religious foundation was the possessor both of spiritual and temporal rights, and frequently it came to pass that the headship of a religious foundation passed entirely into lay hands.

The monastic system was early introduced into 1., e hours if was not until Christianity had gained a firm hold on the country that the form neally associated. country that the form usually associated with I. appeared. The earlier type seems to have been somewhat loose and to have led to much disorder. Further, the Irish hishops did not have any territorial jurisdiction and the consequence was that the number of bishops was very large. Each tuath, or tribe, had, however, a bishop who was recognised as an official momber of the tribe and who had a considerable amount of influence and power. Judged by the standards of W. Europe the Church in I. was morally somewhat lax, but this was probably due as much to the struggle between the old and new religions as to anything else. Finian was the founder of anything eise. Finian was the rounder of the famous monastery at Clonard which was the beginning of the foundation of that series of monasteries which made I. the centre of learning for W. Europe. Scholars flocked to these monasteries, which were amply encampments of students, i.e. a series of mud huts built by the students themselves. Here they lived and provided themselves with food by their own labour and received also by their own labour, and received also their learning in the open air. These monastic settlements were conducted on monastic settlements were conducted on lines very nuch more severe than the earlier had been. The monks were shut off entirely from the latry, and the sexes were separated. This monastic move-ment seems also to have been accompanied by much missionary enterprise. Mis-sionaries of the Celtic Church went everysionaries of the Celtic Church went everywhere—Columba to Iona, Aldau to Northumbria, Columbanus to W. Europe. In the Orkneys the Celtic Church was estab, and Iceland, when discovered by the Vikings, was found to have been visited previously by missionaries of the Celtic Church. The Saxon kingdoms in the N. and centre of England owed their converted to the huissionaries from Iona. St. sion to Irish missionaries from Iona. St. Aldan became the first bishop of North-

umbria and was succeeded in Lindisfarne by two other Irish monks. The Irish missionaries had brought learning as well as religion, and Northumbria became the cradle of Anglo-Saxon literature. The greatest of the Irish missionaries to Europe was St. Columbanus, a native of Leinster, who laboured for twenty years in Burgundy. Numerous sermons, letters and poems written by him are extant and testify not only to his wide range of knowledge, but also to the high state of learning in the Irish schools where he acquired it. The Irish missionaries soon found them-The Irish missionaries soon found themselves in opposition to those of Rome. The Rom. tonsure had probably been introduced into I. by St. Patrick, but the Irish had certainly gone back to the old drudic tonsure, whilst on the matter of calculating Easter they had remained true to the Jewish method The following were the more celebrated saints of I. and the schools with which meet of them were were the more celebrated saints of I. and the schools with which most of them were connected: St. Benignus, a native of Meeth, favourite disciple of St. Patrick and his successor as Archbishop of Arfamous convent in I., at Kildare; St. Charan, of Meeth, who founded the monastery and school of Clonmaonoise on the Shannon, in which many important Irish annals were compiled; St. Brendan, who founded the monastery of Clonfert; St. Finian, of Moville, who founded the school Finian, of Moville, who founded the school of Moville (near Newtownards); St. Combgall a native of Ulaidh, who founded in that dist. the monastery of Bangor, whose fame rivalled that of Clonard and in which many of the Irish nissionaries were educated; and St. Carthach, of W. Mun-ster, who founded the famous school at Lismore. The few prominent names men-tioned here represent but a small part of the work for Christianity performed in the work for Christianity performed in Europe by Irish zeal. Most of it was done by unknown monks in the many monas-teries scattered over W. and Central Europe. These were continually being recruited by monks from I., who for ages continued the labours of St. Col unbanus and St. Gall. Irish influence on the Continent was the result of no transient effort, but was due to a great movement which endured for six centuries, from the which endured for six centuries, from the

sixth to the twelfth.

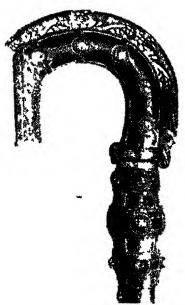
From the fourth to the eighth century the political hist, of I. is a long story of relentiess and practically uninterrupted tribal warfare. The descendants of Niall of the Nine Hostages remained ardri of I. down to the beginning of the eleventh century, but were seldem powerful enough to be able to maintain peace in the country. The Church was not strong enough to perform the work of the ardri, and moreover, the personal character of Church gov. made the Church often a party to the quarrels of the tribes. The descendants of Niall of the Nine Hostages were divided into two great branches, the S. Hy Niall and the N. Hy Niall. At the beginning of the sixth century the Scots from Dairlada made their settlement in Argylishire, and ultimately. after strenuous struggles, obtained the crown of a more or less united Scotland (see Scotland)

the same century Tara coased to be the residence of the ardri, many legends being connected with the desertion of this centre. The records tell us only of constant wars, constant successions, and short reigns The country was in a state of anarchy. One event alone needs to be mentioned, the attempt to rule Dalriada (Argvilshire) as a subject kingdom of the ardri of I, this attempt, however, was given up. The position of the ardri was unenviable. He could command no real allegiance save that of his own immediate tribe. The army of I. consisted of the tribes commanded by their own chiefs. The chiefs owned silegiance to the ardri, but allegiance of such a shadowy type that it counted for nothing. Such was the state of I. when the Vikings began a series of raids which developed into a settlement.

The first invasion of the Norsemen occurred towards the end of the eighth century

The Norwegians were the first century The Norwegians were the first to come, and, aided later by the Danes, made settlements on the E. coast Irish writers distinguish between the natives of the two countries the earlier who came from Norway, are called Fronn gaill ('White Foreigners') and 'Lochlanns', the Dub gaill ('Black Strangers') or 'Danars' came later from Denuark The distinction between them is how ever the distinction between them 19, however, not clearly marked and they are often con-fused. In popular language the invaders are collectively known as the Dancs, while the Noise, or Vikings, or Ostmen The domination of I by the invadors for over a conting was not altogether a misfortune, since it brought that country into closer since it brought that country into closer contact with the countries of the Continent and with W civilisation. Many of the Irish tribes fought in the armies of the Danes who invaded England Foreign trade, especially with Scandinavia, flour land After the middle of the tenth century there rose to fame in Ireland the great Party Lewron a Libests purpose the great Brian Boruma, a Dalcals prince who defeated the Danes and forced them into the position of a subject race bitter struggles with the reigning dynasty Brian managed in 1002 to become ardri himself, and during the twelve remaining years of his life he ruled a penceful and prosperous I He strengthened justice, prosperous I He strengthened justice, he made good laws, and he built schools But he had still to face the hostility of the Danes and the fealousies of the Irish chieftains. In 1011 was fought the famous chieftain. In 1011 was fought the famous battle of Clontarf, which again broke the power of the Danes, but in which Brian himself was killed. His death was a serious blow to monarchy in I and led in the century or more following his death to the weakening of the central power and internetine strife. The hist of I from the battle of Clontarf to the Anglo Norman invasion is the record of contart to the Anglo Norman invasion is the record of contart and contarts. tinual strife, between the O'Briens of Munster, the O'Neills of Ulster, and the

was one which perplexed the Eng. primates during the Norman period. Neither were the relations between the Irish Church and Rome intimate, although in the inster of Easter and the tonsure the Irish thurch had conformed to the usages of Rome. Dublin was regarded as an Fing diocese under Canterbury, and from this beginning the Eng primates had hoped to bring the whole is, into their fold. The synod of Kells of 1152 divided I. finally into dioceses, did much to abolish the anarchic state of Church gov., and made Armagh the sect of the primacy.



Nation d Museum, Dublin
THF IISMORF (ROSH R

An outstanding example of medieval Irish art believed to date from the twelfth century. The still is of yew and the crook is of bronze, with besis of coloured ename! I Isim ire was the site of a menastery founded by St. Carthagh in 633

the battle of Clontarf to the Anglo
Norman invasion is the record of con
tinual strife, between the O'Briens of
Minster, the O'Neills of Ulster, and the
O'Connors of Connaught for the ardrishp
of Ireland The relations with England
during this period were not intimate,
but were nevertheless, usually fairly
cordial. The question of the Church in I.

religion there. carrying out of two reforms in particular : the first of these was the organisation of definite dioceses. This work of reform and organisation, begun 40 years pre-viously by Gilbert, bishop of the Norse of Limerick, and Celsus, bishop of Armagh, and carried on by Mulachy, was com-pleted at the Synod of Kells. A National Church arose, and the unity of the Church in I. was clearly estab. under one recognised head but with full recognition too for the various constituent elements. The other great reform to which Malachy devoted himself was the revival of the monastories. Most of the early monastic institutions in I. were independent bodies, the Columban monasteries being the sole instance of an affiliated Order. The strict discipline of these rules had been relaxed and Malachy resolved to restore it. The Canons Regular and the Cistercians, who practised the severe discipline estab by the Irish missionaries in Europe, were em ployed by Malachy to restore the old monastic spirit in I. and for that purpose he brought communities from the Continent and sent Irish students to be trained in European monasteries. The Irish had, between the four.) and twelfth centuries, advanced but little to far as their social conditions were concerned. A species of feudalism had grown up, but the tribal system and the Brelon law remained in existence. When Henry II, succeeded to the Eng. throne he had already planned the conquest of I. Pope Adrian IV. had given his sanction to the idea, and had desired the conquest as a means of bringing the Irish Church into closer contact with Rome. In 1166 Dermot Macmurragh, exiled from I. because of his tyranny, and exiled from 1. occause of the tyranny, and also because of the hatrod he had roused by carrying off the wife of the chieftain of Brefin, arrived in Aquitainc and asked for help from Henry II. The king was at that time too much occupied with other affairs to attend to Irish matters himself, but he gave Dernot permission to raise forces from amongst his Lords of the Marches, Dermot applied to Richard de Clare, earl of Pembroke (usually called Stronghow), and by promising him the hand of his daughter and the ultimate possession of his kingdom, induced that earl, whose for-tunes were not at their highest level, to help him. Strongbow did not cross over until 1170, but Fitz-Stephen and Fitz-Maurice crossed with a small company of men in 1169, and began the Anglo-Norman conquest of I.

It is impossible to follow here the for-It is impossible to follow here the for-tunes of the first adventurers; suffice it to say that by their superior skill and their united efforts they restored Dermot and paved the way for the overlordship of Henry II. which that king estab. when he visited I. in 1172. The kings of I. were forced to acknowledge Henry as their overlord, the country was placed under the administration of a Norman governor, the barrons who had fought in I were the barons who had fought in I. were

He set before himself the their old Brehon law, and the Anglotwo reforms in particular Normans were left to maintain themselves in their dominions as best they could. The hist, of L for some time after this date is the record of continuous strife between the Norman barons attempting to extend their power and the Irish attempting to retain their customs, laws, and civilisa-tion. The conquered ter. was known as tion. The conquered ter. was known as the Pale, and the whole of I. was ruled nominally by a Norman governor. John was made Lord of I. in 1185, but soon made himself hated, as he was later in England. The real rulers of the land were the De Lacys, who had been granted huge ters, by Henry II., and who, by subinfeudating their land, introduced those great Norman families who have played such an important part in the bist. of I. lburing John's reign, however, Eng. power Such an important part in the nist. of 1. During John's reign, however. Eng. power increased, as it did also under Richard Stronghow and during the reign of Henry III. The reign of Edward I. saw the power of the colonists still on the increase to such an extent that they were able to help I dward in his wars with Scotland; but although in Connaught and in Uister the power of the Eng. was still increasing. nevertheless the Celtic tribes were not yet utterly beaten. During the reign of Edward II. Edward Bruce tried to conquer the is, and to drive the Eng. out, but quer the is, and to drive the Eng. out, but after sev. fulile victories he was finally overcome and slain at the battle of Dundalk. The reign of Edward II.L witnessed the passing of the Statute of Kilkenny, which forbade the inter-marriage of the Eng and the Irish; it also saw the creation of the earldoms of Desmond and Ormonde, added to that of Kildare, Richard II. led two expeditions to I., with both of which he did little good; the Celtic reaction was strong and was strengthened reaction was strong and was strengthened by the Anglo-Irish baronage. One of the main results of Richard's second Irish expedition was that it allowed time for the house of Lancaster to usurp his throne. The period of Lancastrian rule was one of extreme misery for I. Henry IV. could do little, Henry V. was too buslix occupied do in the, Henry V. was too busit occupied elsewhere to turn his attention to I., whilst Henry VI.'s regents did very little indeed. Richard of York was made governor of I. in 1449 for ten years. He ingratiated himself with all parties and became extremely popular. Edward IV.'s reign was remarkable for nothing save its landespass and the fact that Tritott each lawlessness and the fact that Tiptoft, earl of Worcester, became governor of the is. and was responsible for much bloodshed. During the reign of Henry VII. was passed the famous Poyning's law, which gave control of the Irish legislature to the Eng. council, and was responsible for much contention at a later date. The earl of kildare esponsed the cause of Lambert smuol in 1487, but certain of the Irish, and in particular the tn. of Waterford, were strong supporters of the Tudors. Henry VIII, did not turn his attention to I until fairly late in his reign. By this time the Anglo-Irish families were Irish in granted Irish lands, and the Irish Church almost every respect. They no longer was brought by the synod of Cashel Into acknowledged any law save that of the complete union with the Church of Rome. It is the king The Irish were, however, allowed to retain struck with a heavy hand, the power of

the house of Kildare was broken, and the the house of Kildare was proken, and the country was slowly rescued from the hands of the foudal lotds. Henry himself adopted the title of king of L, and the Irish were gradually brought to look to the power of the crown for the redress of their grievances. The native chieftains of their grievances. The native chieftains were also granted titles from the crown and were encouraged to come to count as often as possible. The reign of Edward VI. saw the beginning of the attempt to introduce Protestantism into I. The attempt was a failure, although it was supported by those in authority. The surcere Catholicism of the people was only too evident, and Mary had no dealeulty in restoring the old faith, but the monastic lands which had been suzel were not given back, and in fact Protestants from England found in Dublin during Mary s short reign a place of reture from persecution.

We may revert here to a consideration of the hist, of the progress of the Reformation in I. in the Tudor period. Henry VIII.'s doctrine of his excles, supremacy received little support in 1, where there was no desire for religious innovations. In 1535 Henry appointed a commission to initiate the enforcement in 1. of the Re-Browne, an Eng. Augustinian friar, who had been chosen archielled of Dublin by the king and consecrated for that office by Oranmer, archbishop of Cauterbury, withort any authority from the Pope. But the new archbishop secured only the sup port of the bishop of Meath, and he quarrelled violently with the deputy viceroy, Lord Leonard Grey. In 1536 a parliament, assembled in Dublin, was required to pass 'the Act of the Supreme Head' providing severe penalties for those who obstinately refused to a knowledge who obstinately refused to acknowledge the king to be head of the whole church in I. By another Act, 'first fruits' of eccles offices were to be paid, not to the pope, but to the king. Henry's next step was to undertake the dissolution of the Irish monasteries and convents. There were in I. about 600 religious houses, including seventy convents. By the end of 1553 almost all those in Leinster, most of those in Munster, and some in Connaught and been suppressed. In Ulster and in remote parts of Connaught and Munster, however, monasteries continued to exist however, monasteries continued to exist till the early seventeenth contury. The pretext advanced for the suppression was that they were the abodes of idolatry and superstition, whereas, in fact, the religious houses of I. had performed a number of indispensable social services for the people, including education and hospitals. The dissolution was accompanied, in cases, by violence and bloodshed and many religious suffered imprisonment and even death for their refusal to adhere to the doctrine of the royal supremacy. In 1639 another commission was set up to find and destroy rolles and to transfer images and valuable ornaments, such as golden chaltoes, to the king's use. Browne then tried to evangelise the more distant parts of his archdiocese, and in the result the Irish privy council asserted that 8 bishops and

2 archbishops came before them in Clon-2 arcanisapps came before them in Clon-mel to take the required oath. But of bishops of papal creation, only 5 'con-formed' and these were deposed for heresy by the Pope. Of the lower clorgy few within the Pale took the supremacy oath and scarcely any outside it. wardly I. might conform to the reformed doctrines, but at this period it was the practice in the country to enter into ongagements without any intention of carrying them out When Mary d Elizabeth, a champion

of the Retormation, but one devoid of religious /oul, intended that the State Church of England should vereis sway over I too. In 1566 she directed the Irish Parliament to pass two important Acts the Act of Supremacy, declaring her supreme governor, both in eccles and spiritual and in temperal matters, and denving Papal jurisdiction, and the Act of Uniformity requiring the use of a Reformed Prayer Book at public worship But this religious less lation was far from being strictly enforced anywhere in I and in a great part of the country it was in possible to enforce it. Even where the authority of the Eng gov was effective the queen was careful not to provoke hostility or even tabellion by two great But this moderation was not Heverity severity. But this moderation was not due either to humanity or to we akness on her part. Throughout her reign she directed her Irish policy to the political subjugation of I and its reduction to uniformity with England not only in religion, but also in speech and social customs. Resistance to this policy led to persecution of the Catholies. The realisation, at length, in I that the Reformed doctrines were closely linked with the unposition of foreign rule proved. in the imposition of foreign rule proved, in deed, to be a cohesive influence among the people, who hitherto, far from reveal ing that love of country as a whole which to day is styled Nationalism, had fought and died mainly in the interests of clan conflict But now, under the good of foreign rule, a broader patriotism grew up through the stimulus of the threat to Catholicism Elizabeth found, therefore, in I for her religious policy many realous adversaries, while her supporters num-bened only the few, whose private interests in the than zeal for the polity, induced then to conform. The bishops and priests who refused the Oath of Supremacy were generally deprived of their sees and livings and superseded by Englishmon or Irishmen of more plant dispositions. But the wretched stipends of the sees and livings were not likely to attract men who could hope for eccles preferment in their own country. In consequence the churches were neglected and suffered to fall into rules, and in many places no pero-chal duty was done. In the parts of the country, however, where the authority of the ling gov. was as yet only nominal, conditions were better, especially before the Desmond insurrection had devastated the S. and the O'Nelli wars ruined the

prosperity of Ulster.
With the accession of Queen Elizabeth the State Church was restored in I., but the most noteworthy events in Irish hist. during this period are the O'Neill and later the Geraldine rebellions. Shane O'Neill had been elected chieftain by his O'Neill nad been elected chiertain by mistribe and claimed the earlier of Tyrons, which had passed to a hastard brother, Brian O'Neill. The Eng. supported the claim of Brian, but Shane was able to keep up a continual contest with the crown

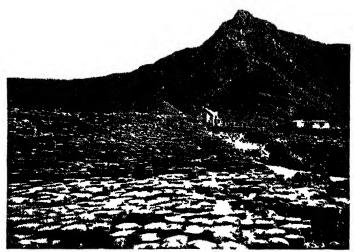
untit finally, in 1567, he was killed.

The crushing of the Shane O'Neill rebellion was followed in I. by a great religious revival. The counter Reforma-Catholicism on the Continent, worked with tremendous rapidity in I., influenced and helped to a very great extent by Jesuit priests. The immediate outcome of this religious revival was the Geraldine rebelilons. The second of these led by earl Dismond, was only put down after four years' continual struggle. The Irish were helped during this period (1579-83) by the Spaniards and the Its., and were crushed finally with great cruelty. The rebellion had been practically confined to Munster, which was finally subdued by huge con-ilscations and Eng. settlements; amongst the settlers were the poet Spenser and the adventurer Raleg' The final rebellion adventurer Rais. The final receilion during Queen Mirab.th's reign broke out in 1595 under O'Neill, earl of Tyrone. Essex, sent to quell it, made terms with leader and returned home; but Mountjoy, by means of a saries of fortresses from which he ravaged and laid waste the land, which he ravaged and had waste the land, thatly conquered it (1603). Tyrone admitted defeat, and was allowed to keep his lands and title. The wars in I. had of a necessity been barbarous once, both because the Eng. unjustifiably regarded the frish as savages and also because I. was struggling for all that England hold in greatest hate—Catholicism and the friend-ship of Spain. The atrectics of the time, equally ferocious on both sides, cannot be palliated, but are perhaps more easily understood. The system of plantations was developed during the reign of James I. The lands of the earls of Tyrone and Tyronnel were confiscated, and Ulster was settled chiefly with Pre-hyterians, although lands were also granted to the city of London. The administration of Strafford is the most important event of the early part of Charles I.'s reign. He promoted industry, law, and order; he restored the country to something approaching prosperity, but his order was the order of repression, his discipline the discipline of the iron hand. His worst and most unjust work was the attempt to 'settle' Connaught, but before he could carry out that work he was recalled to help Charles in England (1640). The great Irish rebellion broke out in 1641, inspired both by hatred of the rule of Strafford and with the first of what would have no under help Charles in England (1640). The groat capitulation of Limerick had, in addition to his in the service of the rule of Strafford and by the fear of what would happen under Puritan rule. Undoubtedly thousands of Protestants perished, although in a number of cases the figures have been grossly parliament did not recognise this latter exaggerated. The situation was complicated by the outbreak of civil war in England, and the Irish sent some help to the king, who was continually intriguing any ownership of property. The gov, of with them. In 1649 the execution of the

king released the parl. troops for service in I., where the young king, Charles II., had been immediately recognised. The methods of Cromwell and Ireton were thorough, and the Irish were crushed altogether. The garrisons of Wexford and Drogheda were massacred, and every priest that the Puritans found was indispriest that the Puritans found was indis-criminately slaughtered. The Cronwell-ian settlement followed, and huge tracts of land were confiscated. The only ments of Cromwellian rule were the res-foration of order and the prosperity which followed a peace of desolation. The Catholic roligion was, however, sternly repressed. The Restoration involved the settling of another great land question. The Cromwellian settlement was to a great extent unset, the original owners were extent upset, the original owners were restored, and the Cromwellian settlers given compensation in Connaught. The thon Catholic religion was also given a certain amount of toleration, and for the greater part of the reign Ormonde ruled I. for the Eng. king. The country was on the whole peaceful, but the trade restrictions imposed were rapidly alienating the Irish people still further, and were the grane of considerable traphs at a later cause of considerable trouble at a later period.

The revolution of 1688 was the immediate such for the outbreak of hostilities bethe skill for the outsides in meetings in twen the Catholics and Protestants of the N. of f. Londonderry and Enniskillen were immediately besieged, and the Protestants found themsevies hard set to hold their own. Londonderry remained uncaptured, whilst the besieged in Ennis-killen broke at and won a victory at Newtown Butler. The siege of London derry is memorable for the valour of its mable, who held out for nearly four months, repelling every attack and sufferme extreme privation and, at the end, stark famine (having eaten all the horses, cars, dogs, rats, nice, tallow, and starch in the tn.) when some Eng. ships broke through the obstructions of the riv. and so thread the siege and saved the in. Much of the credit for this intorio defence was due to a clergyman named George Walker, who had raised a regiment in the Protest. who had raised a regiment in the Protestant cause. In 1690 was fought the battle ant cause. In 1690 was fought the battle of the Boyne, after which lames II. left the country and returned to France. Wm. 111. also returned to England, and the Irah rebellion was crushed by John Churchill, duke of Marlborough, assisted by Ginkell, one of Win's Dutch generals. Cook and Kinsale fell Aghrim was won, and finally Spraffeld after a magnificent. and smally Sarsfield, after a magnificent defence, surrendered Limerick, and returned to France with his followers to tound the famous 11th brigades. The capitulation of Limerick had, in addition oligarchy The great landowners were blessing of the age The United Irishmen never in the country and their representatives treated the Irish peasantry with which he could not fulfil—Catholic eman the utmost cruelty Parliament was in the hands of the great Protestant families and the Church under the control of absentee and usually irrelations bishops. The Irish people were downtrodden, their trade repressed and their land taken from them. Thousands of them emigrated and

cipation—and finally the state of 1 became anarchic the United Irishmen were sternly represed and disarmed Ulster underwent a brutal persecution at the hands of an armed force but was finally disarmed. In 1796 the Fr invasion under Hoche had fulled at Bantry Bay In 1798 the flower of the link nation served the the frish rebellion broke out. It agreest enemies of Fagland since England to extentit was a national rising. The leaders tused to use their services. Towards the held out for Catholic eman ipation and



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THL GIANT 9 CAUSEWAY, CO ANTRIVI

end of the century, however, Catholic | parl reform, and the peasantry were fight repression was lightened, and sov con | ing for separation from Great Britain repression was lightened, and soy concessions in the matter of ownership of land were allowed them These reforms were the immediate outcome of the Amer War of Independence I had to be better treated or there was the Jossibility of her also breaking away The prin result of this wer however, was the granting of an independent parliament. The light troops had perforce been withdrawn from
I. for service in America Ir invasion
seemed imminent The Irish Protestant and Catholic alike, formed a volunteer force to resist invasion I hen gradually they discovered their own power led by Henry Grattan and practically under the threat of rebellion they obtained the repeal

The buttles of New Ross and Vinegar Hill were the only two engagements of import ance and both were defeats for the rebuls The Ir landing was a failure, since it came too lute and Pitt saw that only union could end such anarchy But union was distrusted and disliked. It was only at enormous expense and after much bribery by means of honours that it was brought about Grattan ever a patriot, spoke strongly against it In 1800, however, the Act of Union was passed and in 1801 it be came law | the Irish were to be represent ed in parliament by twenty eight Irish peers and four bishops elected for life by the whole of the Irish pecrage One hun of Poyning's law after trade restrictions had been withdrawn (1782)

The next important event was the French Revolution, which Catholic and Protestant alike hailed as the greatest

Britain, and was to keep her judicial and executive systems. Pitt intended the Act of Union to be accompanied by a measure of Catholic emancipation, but the king (George III.) pleaded his coronation oath and refused to hear of it. Finally, rather than break a pledge, understood if not definitely given, Pitt resigned (1801). Rom. Catholics were unable to sit in the House of Commons until 1829, when the Rom. Catholic Emancipation Act was passed permitting them to do so. O'Connell was the great Irish leader of this time. In 1846 the potato crop failed, and famine made conditions terrible in I. About this time I. also began to feel Amer. competition in the corn market. Great Britain adopted Free Trade, and I., with the loss of protection for her wheat, soon found it impossible to compete with America. Measures were introduced attempting to alleviate the suffering of the smallholders, who, in many cases, were evicted by the impoverished land owners, and thousands of Iri-hmen emigrated to the U.S.A. and Canada. From 1864 to 1911, I. may be seen to change from a land of tillage to one of pasturage. The political inrest was aggravated during these years by the land question. Gladstone brought forward in Parls ment two Home Rule Bills, one in 1986 and the other in 1893, but both were rejected. The work of the but both were rejected. The work of the Irish leader Parnell (q.v.) in consolidating the Irish Home Rule party deserves notice during this period. Again, sev. years later, the Liberal party under Asquith inlater, the Liberal party under Asquith introduced a Bill for Home Rule for L, and in 1914 this Bill received the Royal Assent. But owing to the Great War the operation of the Act was suspended (see Home Rule). During the First World War many Irishmen volunteered and fought for Great Britain, and John Redmond, the Irish leader, used all his influence to assist the Brit. cause. But trouble between the two countries was still brewing. In 1916 there was a rising in Dublin, and after the war and the in Dublin, and after the war and the death of John Redmond matters grew worse. Secret societies and societies which were perfectly open in their proceedings strove more and more to separate ceedings strove more and more to separate
I. from Great Britain. In 1919 an Irish
Republic was set up with its own parliament, the first Dail. In 1920 guerilla warfare began in I between I. and Great
Britain, and a system of reprisals resulted, which was ended by a truce in 1921. In that year a N. I Parliament was set up in Ulster and later in the year a treaty between Great Britain and I. was signed. In 1922 the Irish Free State was formerly inaugurated. For subsequent bist., sec KIRE: and see also GREAT BRITAIN and

IRELAND, NORTHERN.

Irish Lilerature.—I., more than any other country in W. Europe, possesses a vast mass of poetry and saga, existing in MS., much of which has not yet been catalogued, but this is no doubt only a fragment of the whole of anct. Irish literature. The poet Senchan Torpelst, in the Book of Leinster, a.D. 1130, laments that the Cattle Raid of Cooley and the Great Skin Book had been taken to the E., and in many other of these anct. MSS., are similar

references to books that have disappeared. Prior to the writing of MSS., there existed in I. the bardic schools of poetry and, at a later date, the Christian colleges. We find in the many lives of the saints references to these Christian colleges, but little is known of the bardic schools. It is supis known of the bardic schools. posed that they were formed round a chosen bardle poet, who was followed from place to place by his disciples. The earliest extant MSS, written in Old Irish date from the eighth century, and are mostly glosses and explanations of book used in Itish church schools. Other Gaelic works in order of antiquity are the Hook of Armagh, poems contained in the Milan and the St. Gall codices, and the Martyrology of Angus the Culdee. Later, from the twelfth to the sixteenth contury, follow the books of the Middle Irish period, which includes the Book of Leinser and the Book of Ulster containing the Callle Raid of Cooley. The Middle Irish books, however, were compiled from poemy and, sagas of a much carller date. As Irish literature developed, it con-centrated on the writing of romances, and, unlike other Celtic literature, no and, unlike other Celtic literature, no drama was produced. Stories of cattle raids, batrles, courtships, voyages, visions, destructions of places by sword and tempest are the subjects of epic and romance in prose and poetry, which formed the repertoire of the ollamh or chief bard. To learn his craft took the bard from nine to twelve years. The introduction of Christianity had little influence on the early romances, which may be divided into the following mythological cycles: the Cycle of Tuatha De Danana and the Pre-Milesians, the Red Branch Cycle, and the Cycles of Finn Nac Cumball, Ossian, and Oscar. These romances date from before the eighth century. Following the Norse invasions of the ninth and tenth centuries, literature and art were blotted out, but in the eleventh and twelfth centuries there was a revival in art and learning. It was during this time that the Middle Irish books were ompiled, but, owing to Norman interference, the thirteenth century was comparatively barren. The most important poet of this period was the bard Donoch i Mor O'Daly (d 1211), but there are few poets men-tioned who belong to this time, and not many poems are extant. During the four-teenth century poetry again flourished, the most important poets being Tadg Mor O'Higinn (d. 1315) and John Mor O'Dugan (d 1372). From this time date the compilations of annals and family records, pulations of annais and manny records, and the profession of neetry became hereditary, noteworthy families being the O'Dalys and the O'Higinus. Fergal O'Dalys and Angus O'Daly, the satirist, Tadg Og O'Higinu and Dubhthach, son of lochadh, are celebrated poets of the fifteenth and sixteenth centuries. With the eventeenth century came a revival of Irish literature under the four masters, Seathrun Keating, Father Francis O'Mul-loy, Lughaidh O'Clery, and Duald. These four men were poets, while Mac Firbls was the greatest prose-writer of that time. A later poet was Teig Mao Dairo, but with

the eighteenth century came the downfall I have ab indoned the peasant-life comedy of of the ollamhs, and their poetry became inbued with melancholy, for they were reduced to poverty and found it impossible even to educate themselves. The sor rows of the ollambs are well expressed in the prolife works of David O Bruadar, who is a typical poet of this period. During the end of the nineteenth and the begin ning of the twentieth century there was a revival of the Irish language and its literature, and (isolio became the official lan guage of Erre Also many Insh dramat ists, writing in Eng , have used the and Irish myths

The Irish contribution to Eng litera The trish contribution to king literature has been peculiarly rich in drams, perhaps the most fertile field, Goldsnuth, Congreve and Farquhar, Wilde, Shaw, and O'Casey, in poetry Thomas Moore and Yeats in philosophy William Rowan Hamilton and A E (George Russell) in novel writing, Lover and Lever and in England, James Joyce During the past country of a century this convenient of a century this convenient. quarter of a century this entichment of English by writers of frish extraction has continued These years have seen the achievement by Eire of independence, a decline in the heroic mood and the rise, of a new middle class of traders and civil servants, and it is against this background, with its inevitable disenchantments that movelist critics such as Frank O Counor and Sean O'Paolain have written in the past two decades while can o Casey, the playwright, has made interesting attempts at a fusion of a racy realism with symbolical significance Mary Layin with sev vole of short stories including Tales from Bective Bridge (1913, Fait Prize) and a novel, has been the sole reminder from a neutral Iroland that the standard of work in hetion set by Frank O'Connor and Sean O Faolain has not been lost Her stories have a singing quality, with prose heightened through local ideom to the musical form familiarised by J M Syngo Michael McLaverty's notion is drawn from his experience of the Rom Catholic people of Bill at and vicinity His last novel The Three Brothers (1918) in its even and lyrical prose, is typical of his exactness of vision. Bry in Mac Mahon of Kerry is a voing story teller whose Lion Famer and Ollier Stories (1918) reveals a talent developed in the tridi-tional stanachie manner Victael O'Beurie acutely pictures the lower middle class of Dublin Among poets there has been something in the nature of a reaction to Yeats, whose greatures has somewhat obscured their individuality. The Guelic obscured their individuality. The (hold influenced poets (writing in Lug.) include Austin (larke, Robert Farran Padraic Fallon and Donagh MacDonagh. 9 Irish poets using a more typically 'modern' idlom and more concerned with ideas, are Ewart Vilne, Valentin Itemonger and Geoffrey Laylor Ulster poets are John Hewitt and W.R. Rodgers whose concern is with the problems and way of twing of a distinctive community. cern is with the problems and way of living of a distinctive community in Irish drama, Lord and Lady Longford (of the Abbey Theatre), Teresa Deevy, Gerard Healey and Walter Macken are among a small group of playwights who

Synge for the distraction of contemporary Noteworthy, also, is the Gate Theatre, hife Noteworthy, also, is the Gate Thesire, Dublin, founded in 1928 for Irish writers who have written in leng., we further under LNGIISH LITERALI RI See also (Alter LNGUNG) AND LITERATURE. Consult W. H. Maxwell, History of the Union and I manett's insurrection in 1923 (dissertations by Goorge Chulchent).

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freland, Church in, was founded, according to tradition, by St. Pitrick, who has always been regarded as the patron saint of the country, in the fifth century. In the seventh and eighth centuries the Irish Church was one of the most flourishing in Christendom See IRFIAND—History Despite the outward continuity of the present Church of Ireland with the preof the Reformation Church, it has for centuries been the Church of only a section of the people of whom by far the larger portion remained under papal jurisdiction. The first envocation of the first clergy was held in the reign of Jimes I, the Irish actives held in the reign of Jimes I, the Irish actives helm grawn up in 1010. These wer accepted by the Irish Church in 1634. Their distinctly Calvinishe tone is indica. tive of the way in which the Church of Ireland has dways inclined more in the direction of the advanced reformers than has the Church of England During the sevent continuous transportant prelates were John Branchall, Archbishop of Armagh, Jeremy Taylor, Bishop of Down, and Wm King, Bishop of Derry. The Act of Union of 1800 linked the Churches of England and Ireland into the

'United Church of England and Ireland,' but the reformed doctrines made no progress. In 1833 the Church Temporalities Act abolished two of the four Irish archbishoprics and eight of the eighteen bishoprics. Finally, in 1869, a Bill for the discatab. of the Irish Church was passed on the introduction of Mr. Oladstone. Before the Act came into opera-tion (1871) a synod of the Irish Church was held which declared its adherence to the anct. constitutions of the Church, and since then no doctrinal or disciplinary changes of importance have been made. The Church of Ireland now his about 1500 clergy, and nearly 600,000 adherents. See clergy, and nearly 600,000 adherents. See R. Mant. History of the Church of Ireland, 1810; Leo's Irish Episcopal Succession; T. Olden, Church of Ireland, 1892; L. Gougaud, Christianity in Celtic Lands, 1932; W. Phillips, Church of Ireland from Earliest Times, 1933; M. V. Rouan, Reform in Ireland, 1936. Ireland Island, see BERMUDAS. Lesiand Northern were consisting of

Ireland, Northern, area consisting of Belfast and Londonderry and the cos. of Antrin, Armagh, Down, Fermausgh, Londonderry, and Tyrone. Its area is 5236 sq. m. and the pop. 1,279.745 (1937). When, by the *reaty of London, 1920,

which ended the war between England and Ireland, Ireland was offered dominion status (q.v.), Ulster or the Six Counties elected to remain within the United Kingdom of Great Britain and N. I. The dissociation of Ulster (q.v. and IRELAND History) or N. I. from the rest of Ireland goes back to the time of Henry VIII., when Protestant England installed Eng. and Scottish settlers in Ireland to work and own the land from which, in many

instances, the Irish had been dispossessed. A parliament, consisting of a senate of two ex officio senators and twenty-four sonators elected by the members of the House of Commons of N. I. on the pro-portional representation system and a House of Commons of fifty-two elected members was set up in 1920. The executive power is vested in the Governor on behalf of the king; he is appointed for

a term of six years but the appointment of the Duke of Abercorn (first appointed in 1922) has thruce been extended for a similar period. The Ulster parliament possessor governing powers within its own area, but lacks control of the military, the right to make treaties, and the authority Thus, in detail the matters ex to tax.

the U.K. are the province, not of the was manufact.
Commonwealth Relations Office (as are value of #6 in

those of Eire) but of the Home Office. N. I. counists of six cos. (for their pop. see table p. 586) and two co. hors, but the boundary between N. I. and Eire has boundary between N. 1. and rary need caused strained relations and, nuder the Finna Fail (q.v.) Gov. of Mr. de Valera, and its successor, the partition growance has become the dominant political issue in Eiro. By a treaty in 1925 the boundary and the finding of the contract of the cont ary was left as it was and the findings of a ary was left as it was and the findings of a commission (the Feetham Commission) were abandoned. Owing to the civil disturbances in Ireland a large police force was organised in N. I., and is still in existence, known as the Royal Ulster Constabiliary. Sir James Craig was elected to be the first Prime Minister, in 1921, and again in 1926 (see Crangayon, Viscount). N. I. has accepted the taxation imposed on that the Improved Constability. it by the Imperial Gov., the more willingly as it has generally been lower than that ovisting in the Irish Free State or Eire. More than two-thirds of the people of tister are devoted Brit, patriots and resent any proposal of union with Eire (or S. Ireland as Eire is often called, though in fact Eire comprises much more than S. Ireland). But for the pro-Erre minority living chiefly in Tyrone and Fermanagh and the possibility of civil disturbances between Ulstermen and the S. Irish, conscription might have been applied to N. I. during the Second World War. Considerable advantage, however, was gained from the fact that the bridgehead of N. I. re-mained unscathed throughout the war, during which a strong garrison of Amer. troops were landed and the fortifications were considerably strengthened despite

Mr de Valera's formal objection.
The prin. industries of N. I. are agriculture, ship-building and repairing, engineering, flax-spinning and weaving, nen bleaching and finishing distilling (whiskey, etc.), linen embroidery, manuf. of taxtic machinery, fruit preserving, food caning, flour milling, air conditioning plant, aircraft, rope making, woolens and tweeds, hosiery and other clothing, tobacco, furniture, chemical manures, perambu-lators and toys, shirts and collar pottery, roofing folt, optical goods, matches, cement, plastic ware, leather and leather goods, and carpets. In summer months herring fishing and picklin, is an import-ant activity. Beltast is the leading industrial centre, and the linen industry gives employment to over 70,000 persons (excluding those engaged in growing the fibre)

oluded from its authority as being matters of imperial concern, are the Crown making of peace or war, military, naval and air force, treaties, titles of honour, naturalisation, domicile, external trade, submarino cables, wireless telegraphy, aerial navigation, lighthouses, coinago, trade marks, etc.; also certain matters reserved to the Imperial Parliament manely, postal service, Post Office and Trustee savings banks, designs for stamps, and registration of deeds. N. I. is, indeed, 25,000 loor for all practical purposes a part of the United Kingdom, returning twelve mombers to Westminster, while relations with the U.K. are the province, not of the Commence of the Commence of the control of the Commence of the

workers in the clothing and textile trades in 1947. Londonderry is an old estab. centre of the shirt-making industry. The only minerals are sandstone, clay, chalk, or other igneous rocks, and granite, the quarrying of which employs some 3000 persons. In 1946 there were some 1663 elementary schools with 185,600 pupils; and 76 presenters in temperature. elemontary schools with 185,600 pupils; and 76 preparatory, intermediate, and secondary chools with nearly 20,000 pupils. The Queen's Univ. Belfast, has some 2000 students. The revenue of N. I. in 1945-46 was £51,216,000 and the expenditure was much the same. The total

COUNTIES AND COUNTY BOROUGHS	Arka in Statute Acres	POPULA-
Antrim (Bolfast) .	702,900	197,266
Armagh (Armagh)	312,767	108.815
Belfast Co. Bor	15,289	438.086
Down (Down-	,	
patrick)	609,057	210,687
Fermanagh		-
(Enniskillen)	417.912	51.569
Londonderry	,	,
(Londonderry)	512,580	94,923
Londonderry	014,000	01,000
Co. Bor	2,198	47 019
	2,100	47,813
Tyrone (Omagh) .	779,548	127,586
Total for N. Ireland	3,352,251	1,279,745



Irish Linen Guild

I LAX HARVESTING IN NORTHERN IRELAND

The flax is put into the retting dam where it will steep for about ten days

railway mileage is 677, the chief railways being the Great Northern, L. M and S. (N. Cos. Committee), Belfast and County Down, and Londonderry and Lough Swilly. Air services are in operation between N. I. and the prin. airports of Britain. Although economically N. I. is allied to England, much of the pop. is of the peasant proprietor type common to the whole of Ireland; in 1937 the total pop. was 1,279,745.

In According to the census of 1937, the off owing are the areas and pop. of the cord and co. bors. of N. I. The names of amora aps. appear in parenthesis:—

Irenseus, Saint (c. 120-202), bishop of Lyons at the end of the second century, said to have been a native of Sinyrna, Asia Minor. In early youth he seems to have been connected with Polycarp. He was a priest of the church at Lyons under Pothinus, its bishop, upon whose martyrdom, in 177, in the persecutions of Marcus Aurelius, I. succeeded to the bishopric, which he held for twenty-five years. He spent great labour upon missionary efforts among the pagen Gauls, but he is best known for his attempts to mediate be-tween the bishop of Rome and the Christian churches in Asia Minor in their dispute about the proper day for the celebra-tion of Easter, and for his opposition to the Gnostics and the Valentinians. The account of his martyrdom under Severus is not found before the writings of Greg-ory of Tours, and is probably a mistake. Of his writings, a few fragments of the Ad-Of his writings, a few fragments of the Adrersus Hiereses, in the original GL, and a barbarous Lat. trans. of it are all that are extant. See editious of his works by Frasmus, 1526; A. Stieren, 1818-53; W. W. Harvey, 1857; and in Clark's Anto-Nicene Library; and Le P. Salvator Herrera, St. Irinee de Lyun exigeté, 1920; L. Spikowski, La Doctrine de l'église dans St. Irênée, 1926; S. Lundström, Studien zur lateinischen Irenaus Überschzung, 1913

Irene: (1) (c. 752-802), Byzantine em-Press. she was a poor but beautiful and talented orphan, a native of Athens, whom Leo IV., E. Rom. emperor, married in 769. On the death of Leo (780) she ruled over the empire, her son, Constantine VI., being only ten years of age. She restored the orthodox image-worship, for which deed she was canonised by the Gk. Church after her death. When Constantine grew up he trad to free himself of her autocratic sway, and in 790 was proclaimed sole ruler by the soldiers. Two years later the empress compared against her son, and had his eyes put out. She tried to arrange a marriage between herself and Charlemagne. In 802 she was banished by the patricians to Lesbos, Nicephorus, her treasurer, being placed on the throne. (2) A Rom. god-dess of Peace, according to Hesiod a daughter of Zeus and Themis. Sho was worshipped at Rome and at Athens.

Ireton, Henry (1611-51), Parliamentarian general, b. at Altenborough, Notts; graduated at Cambridge Univ., 1629, and studied law. Married Cromwell's daughter, Bridget, and acquired great influence in the Parliamentarian party. Took an active part in the Civil War, on the outbreak of which in 1612 he was nominated break of whitch in 1612 he was nonmanear captain of a troop of horse to be ruised at Nottingham, near which in, his estates were situated. He fought at Edgehill and at Nasoby, and was present at the siege of Bristol. He signed the warrant for the execution of Charles I. In 1649 he went to Ireland as Cromwoll's deputy, and rendered vectors as service to his party. He dered yeoman service to his party. He died of fever when besieging Limerick.

Iria, see Voghera.

Iriarte, Tomás de (1750-91), Sp. poet, b.
at Orotava in Tenerifie. He began his at Orotava in Tenerifie. He began his literary career by the trans. of Er. plays, publishing his first original comedy, Hacer que hacemos, in 1770. In 1771 he became official translator in the foreign office at Madrid, and in 1776 keeper of the records in the War Office. A dull didactic poein, La Musica (1780, Eng. trans., 1807), inspired by Haydin variouch admired, but his fame resis manniven his habites. his fame rests mainly on his Fabulas Laterarias (1782, Eng. trans., 1806), two of which, The Donkey Flautist and The Duncing Bear, are especially celebrated. See E. Cotarelo y Mori, Iriarte y su épora, 1897

Iridacese, natural order of monocoty-ledonous plants, consisting of nearly 1000 species, which flourish in temperate and tropical lands. They are usually her-baceous plants of such beauty as to justify their cultivation for ornament alone. The their cultivation for ornament alone. The fris (q.v.) and Crocus (q.v.) are repre-sentatives of the predominant northern form of this order, as the Gladiolus, Freesia, and Isia are of the southern. Iridium, one of the metals of the plat-

iridium, one of the metals of the platinum group. Its symbol is Ir, its atomic number 77, and its atomic weight 193 1 1. occurs as an alloy of platinum, and also of osmium in the Urals, Brazil, and elsewhere. It is fusible only with difficulty, extremely insoluble (in the massive form it is not attacked by aqua regia), and separable from its allied elements only with difficulty. The best method for its preparation is that devised by St. Claice separable from its allied elements only with difficulty. The best method for its preparation is that devised by St. Claire Deville and Dobray. This consists in fusing comiridium with zinc, distilling off the latter so as to leave a porous mass. This is powdered, mixed with barium nitrate, and ignited. The comium is converted into barium comate, and the line. verted into barium osmate, and the l. into its oxide. On boiling with nitric acid the osmium is volatilised as the tetroxide, while the L is obtained in solution from which the double amnonium chloride can be prepared. This, on ignition, gives I. in a spongy form, which, on fusion with lead and subsequent treatment with nitric acid, gives the pure metal. I. is used for pointing gold pen-nibs, for electrical spark-ing contacts, and for making standard measures. Its compounds resemble those of platinum (q.v.).

fridosmine, see OSMIRIDIUM.

Iriga, tn. of the prov. of Ambos Camarines, Luzon, Philippine Is., on the Bull R. The chief products are rice, Indian corn, sugar, pepper, cacao, cotton, tolacco, copra, and hard woods. Pop. 90 000

Iris, in Gk. mythology, was the daughter of Thaumas and Electra, and the sister of the Harpies. In the Iliad she is mentioned as the messenger of the gods, but the office is given to Hermes in the Odyssey. In earlier writers she in mentoned as a virgin goddess with wings of gold, but later writers make her the wife of Zephyrus, and the nother of Eros. She was especially considered the messenger of Hera and Zeus, and is depleted with a herald's wand, and a pitcher in her hand. In Gk, the word 'iris' denotes 'a rainbow,' of which she is generally considered

Iris, one of the larger of the asteroids, planatolds, or minor planets, a group of small planetary bodies between Mars and Jupiter, first discovered in 1801 and 1802.

See ASPEROIDS.

the personification.

Iris, chief genus of Iridaceae. There are many sections of the I. family, but the family may be divided into two main sections—the species and the tall-barded varieties. The species are the wild irises, most of them small-flowered, which have been found growing throughout the N. been found growing throughout the N. hemisphere—California, Morocco, Transfordan, Persia, China and many other places including Britain. As far as species are concerned there are about 200 different types, some grown from bulbs, some from roots, and others from ritzomes. Seven aspecies are easy to obtain and grow. These are I. reticulata, with fragent and valuat flower does obtain and grow. These are *I. reticulata*, with fragrant and velvety flowers, deep volet in colour; *I. stylosa*, the ideal plant, which blooms all the winter with blue flowers excellent for cutting; Sp. and Dutch irises, both Junc-flowering types, which grow readily in any normal soil; Siberian irises with attractive flowers in violet, white and blue colours; *Kampferi* or Jap. 1., with broad that blue purple or white flowers; and *I. ch inaeris*, a small, low-growing counterpact of the a small, low-growing counterpart of the tail-bearded varieties, useful for rock-garden or border. In the tail-bearded section the only I. known to many gar-deners is the purplish-blue variety known as Germanica. The well-known species of I are known popularly by the names of fleur-de-lis, flowers-h-luce and flags. Among the best-known species which are Among the best-known species which are to be found in Britain are the *I. pseuda-corus*, the yellow flag, and *I. foetidissima*, the gladwyn or blue *I. I. foetidissima*, the gladwyn or blue *I. I. foetidissima*, the Florentine *I.*, is a native of S. Europe and the is. of the Mediterranean; its rhizome has an aromatic edeur like that of the sielet, and is known as orris-root. The violet, and is known as orris-root. The Algerian I., which has large blue-purple blooms, is one of the best of all winter

looms, is one of the best of all winter flowers and will grow in a poor soil.

Irish Free State. The name given to S. Ireland by the Irish Free State (Agreement) Act, 1922, which repealed the Gov. of Ireland Act of 1920 (Home Rule) and created a dominion in Ireland on the Canadian model. Under Mr. de Valera's

Irish Fusiliers (Princess Victoria's), The Royal. Formerly the 87th and 89th Regiments. The 87th was formed in 1793, and fought under Abercrombio in Egypt in 1801. It gained great fame as the 'Faugh-u-Ballaghs' (Clear the Ways) in the Peninsula, where Sergeant Masterson of the regiment cantured the first son of the regiment captured the first Fr. Eagle during the campaign. It then took part in the Crimean War, the 1882 took part in the Crimean war, the 1802 Egyptian campaign, and the Burmese War of 1885. The R.1.F. took part in the South African War (1899–1902), and was at the Relef of Ladysmith. During the First World War it raised fourteen battalions, which fought in France, Flanders, Macedonia, Gallipoli, and Palestine. After the war it was reduced to one battalion, and linked with the Royal Inniskilling Fusiliers to form one corps. In the Second World War the regiment was part of the famous Eighth Army and fought in many battles on the It. front. Detachments of the regiment also formed part of the Brit. garrison in Leros.

Irish Guards. Formed in 1900 to commemorate the gallantry of Irish regiments during the S. African War, 1899–1902. It was formed from volunteers from other regiments of Foot Guards. During the First World War it raised three battalions First World War it raised three nattaines which served in France and Flauders, bearing the following honours, among others, on its colours—Mons, Marne, Ypres, Gheluvet, Loos, Somme, Passchendaole, Cambral, Bapaume, Hindenburg Line, and Sambre. General the Earl of Cavan is Colonel of the Regiment and King George VI. is its Colonel-in-Chief. In the Second World War the I. G. fought in numerous hattles in Italy and on the W. Front. battles in Italy and on the W. Front.
'Irish Independent,' founded in 1891 as a

penny daily newspaper, the I. I. (now pub. at 14d.) has the largest circulation of any daily paper in Eirc. It is a strong supporter of the Fianna Fail party, and is active in upholding the revival of the Gaelio language—but evidently without much success—and in promoting the Irish arts and industries. The I. I., together with its satellite papers, the Evening Herald and the Sunday Independent, takes

Heraid and the Sunday Independent, takes a great interest in all sporting events. Irish Moss, see CARRAGEEN MOSS. Irish Nationalist Party, see NATIONALIST. Irish Press, organ of the Flanna Fall (q.v.) party in Eire. Founded in 1931, as an Irish National paper, but was subsidised mainly by disaffected Irish Americans. It is the organ of the present (1947) Eire Gov. and has no sympathy with the Brit. Commonwealth.

the Brit. Commonwealth.

Irish Regiment, The Royal. Formed from certain Independent Companies which were regimented in 1683. It fought at the Boyne and at Limerick under Wm. 112. It greatly distinguished is the fail of Namur in 1695, where its conduct gained from Win. III. the grant of one of his own badges, the Lion of Nassau. It fought under Mariborough at Bleahelm, etc., and under Abercromble at Alexandria in 1801. It took part in the

Gov. the name was changed to Eire. See New Zealand (1881), and Egypt (1882) campaigns, and was at Tel-el-Kebir. It is Fusiliers (Princess Victoria's), The Royal. Formerly the 87th and 89th 1902. In the First World War it raised nine battalions, which served in France, Flanders, Macedonia, Gallipoli, and Pales-As a consequence of the inauguration of the Irish Free State the regiment was disbanded in July 1922.

irish Republican Army (I.R.A.), illegal association of Irish extremists, who stand for a republic of all-Ireland, entirely independent of the Brit. connection. They independent of the Brit. connection. They are the successors of those members of the S. Irish Volunteers who refused to light for the Allies in 1914 and who formed themselves into the Irish Republican Volunteers, organised the Easter Week Itising in 1916, and proclaimed an 'Irish Republic.' More extreme than the Sinn Feiners, they rejected the Anglo-Irish Treatv of 1921, and in 1922 involved their country in a second civil war. They numbered probably about 25,000 in the time of the Fine Gael (Cosgrave) Gov., but dwindled to less than 10,000 in the course of the Finana Fail (q.v.) rule of de Valera. Like the I.R.A., Mr. de Valera, when Prime Minister, aimed at the abolition of the border, but whereas he pretion of the border, but whereas he preserved some kind of external association with Britain, the I.R.A. wanted absolute independence, and to that end they organised a series of bomb explosions in Great Britain—probably in conjunction with Nazi agents—but after the passing of the Provention of Violence (Temporary Measures) Act, 1939 to expedite legal pro-cedure against the malefactors, considerable numbers of the I.R.A. members were deported to Erre and one or two were hanged for murder. In Erre in Dec. 1940 they raided the Phienix Park Arsenal and stole large quantities of arms and ammunition, whereupon the Dall passed an emergency act authorising the gov. to intern suspects. Early in his tenure of office do Valera had proscribed all pseudo-military bodies, such as the Blue Shirts, and it might have been supposed that the Act was sufficient for the purpose of rounding up the I.R.A., but in Eire it is difficult to secure a conviction, juries being either sympathetic to the suspect of afraid of the I.R.A. The I.R.A. has no official organi-

A. The I.R.A. has no omean organi-sation, only ventures to meet in secret, and is governed by an 'Army Council.' Insh Rifles, The Royal (now The Royal Ulster Rifles). Formerly the 83rd and 86th Regiments, which were linked in 1881. The 83rd was raised in 1793, and gained its first honours under Wellington in the Penninsula. It then saw service at the Cape, in Ceylon, and America. During the Indian Mutiny it served in Central India. The 86th was originally employed as Marines, but in 1799 went to India, where it served with distinction at Bhurtwhich it served with distinction at Haur-pore (1805). During the Indian Muthry it served in Central India, and later at the Cupe. The R.I.R. went through the S. African War, 1899–1902. During the First World War it raised twenty-one bat-talions, which served in France, Flanders. Alexandria in 1801. It took part in the Macrdonia, Gallipoli, and Palestine. In Crimea (1853-56), Afghanistan (1879-80), consequence of the inauguration of the Irish Free State its title was altered from The Royal Irish Rifles to The Royal Ulster Rifles.

Irish Sea, sea which lies between the N. of England and the N. of Iroland, con-nected with the Atlantic on the N. by the N. Channel, and on the S. by St. George's Channel. The greatest breadth (between Morecambe Bay, Lancashire, and Dundalk Bay, Louth) is 150 m.; the greatest length is about 110 m. Within its boundaries are the Isles of Man, Anglesey, and Holyhead.

Irish Setter, sec SETTER.

Irish Terrier, rather large dog, varying

duce it. The old I. Ws. enjoyed a great reputation for their strength and their courage in attacking wolves. In appearance they seem to have been of two kinds. one resembling a greyhound, and the other a mastiff. Modern I. Ws. are the result of the endeavours of Capt. Graham of lursely, Gloncostershire, to reproduce the old breed, but there is no positive proof that they do so. They are the result of crossing the Great Dane and deerhound, but a fine specimen exhibited in 189; was the result of crossing a bitch, of Scottish hounds strain with a dash of Siberian wolf strain, with a Russian wolf-



IRISH TERRIER



T. Fall

IRISH WOLFHOUND

in weight from 17 to 25 lb.; with a hard, rough, and wiry coat, without any tendency to curl. Its usual colour is a bright reddish-brown, but varies through different shades of brown. Its hoad should be long and rather narrow; the ears small. oe long and rather narrow; the ears small filbort-shaped, and lying close to the head; the eyes small and bazel, and the now black; the fore legs straight and strong with round thick foet; chest narrow with deep brisket, and back straight and strong; the tail, if not cut, should curve. The I. T. is quite a modern breed, dating from about 1970; it is much valued for its affection and pluck, and its enthusiasm

for chasing anything and everything.

Irish Times,' constitutional daily paper pub. in Dublin and widely cheulated throughout Ireland at the price of 2d. Originally a penny newspaper, it was founded by Major Lawrence Knox as and anti-Homo Rule, anti-Catholic, and loyalist paper of a very pronounced type. In contrast to the Irish Press it stood for the maintenance of Iroland's place in the Brit. Commonwealth of Nations. The paper was purchased in 1873 by Sir John Arnott. The I. T. company also publishes in Dublin an Evening and a Weekly

usnes in thinnian meaning and a Weekly ed. of the L. T., and the Irish Field, a paper devoted to every kind of sport. Irish Water Spaniel, see Spaniel. Irish Wollhound, supposed to be the oldest breed of dog in the United King dom, but the original breed in reality has died out and information to unwestignt.

The I oints of this modern breed hound. as required by the Irish Wolfhound Club standard, are: general appearance not quite so mussive as the Great Pane, but more so than the deerhound, the largest hunting dogs in existence, with minimum height of 31 in. and weight of 120 lb. (bitches 28 in. and 90 lb.); head long and narrow, muzzle long and moderately pented, and ears small, and greshoundhke in carriago; neck long, very strong and nuscular, well arched will out dew-lap, chest very deep and breast wide; back moderately long; lone arched; beht well drawn up; tail b ng and slightly curved, of moderate thickness and well covered with hair; shoulders muscular and sloping; elbows well under; mus-cular thighs with second thigh long and strong, and hocks well let down; feet moderately large and round with toes well arched; hair rough and hard on body any colour that appears in the deerhound but black is rare.

Inus, inflammation of the eye, in particalur of that coloured membrane called the iris which lies between the cornes and the lens. I. is usually associated with some constitutional aisturbance, such as nout, rheumatism, syphilis, or tuber-culosis; it may be secondary to inflammation of the cornen or of the sciencite or choroid coats. It is sometimes symptomatic of meningitis. The symptoms are dom, but the original breed in reality has did out, and information concerning it is only obtainable by tradition, although dread of light and the shedding of copious sev. attempts have been made to reprotect the art. The physiological changes include an excess of blood at the beginning of the attack, followed by exudation into the fibrous substance of the iris, possible adhesions to the lens or collections of pus between the lens and the iris. The attack may be the substant of the state of the substant of the substa may subside in about six weeks, it may may subside in about six weeks, it may become chrome, or it may take on a recurrent form Generally, rest for the eve is of prime importance; the eye should be shaded and no occupation requiring its constant use should be permitted; the patient should not, for instance, read at all Pain may be alleviated by hot formentations or the administration of cocaine It has been found that adhesions may be treated with success by the use of electrolytic methods

Baikal. Fishing in Lake Baikal and trapping for furs are the chief occupations outside agriculture. The climate is tions outside agniculture. The climate is severe and earthquakes common in the neighbourhood of Lake Baikal. The man hab are mostly Russians, Burists, and Tunguses. Area 280,429 sq. m. Pop \$21,000. The chief this are Irkutsk, Balagansk, Kirensk, and Verkholensk. (2) Cap of the E. Siberian Region, and a univ tn., lies on the Angara R. and on the Trans-Siberian railway, 40 m. N. of the Sextremity of Lake Balkal and 3722 m. from Lennigrad. The tn. was almost destroyed by fire in 1879, and has been rebuilt on a remarkably fine plan. It has many fine buildings, factories, and a gold. many tine buildings, factories, and a gold



Soviet Weekly

IRKUTSK REGION: LAKE BAIKAL The railway on the lakeside serves Baikal mica mines

Irkutsk: (1) Region of the R S.F S.R. in E. Siberia The country is of a moun-S E. Siberia tainous character, with a general elevation tainous character, with a general elevation of about 1500 ft., traversed by the lottier chains of the Kitoi and Tunkun in the S., the Sayan Mts from S. to N E, and the great platau of N. Siberia to the N. A great part of the area is given up to agriculture, rye, wheat, harley, eats, and potatoes being cultivated and cattle bred, but the S E portion is largely forest land The most important riv. is the Angara and the Manchester Ship Canal. Pop. (1000 m.), connecting Lake Baikal and the Yenisei. Coal, gold, fron, salt, fire-clay, and granite are found, but are little worked. There are mica mines by Lake of the Herminones The huge wooden

reflucry, and is an important commercial post and the centre of the tea trade. An arr service, increasingly employed in the transport of gold and furs, has been estable between I and Yakutsk. Riots occurred in I during 1917, and in July 1918 the transport of the transport of

Irlam, eccles par and vil. of Eccles (q.v.) S. Lancashiro, Lingland, 71 m. S.W. of Manchester, at the junction of the Mersey

posts called Irmin Pillars were raised in his honour and worshipped by the Saxons during their wars with the christianised Gauls I he chief seat of this worship, the Irminsal (Westphalia), was destroyed by Charlemagne in 772 'Irmin 8 (hanot' was an anct name for the Great Bear

Irnarius (sometimes called the 'Lucerna juris'), It jurist, b at Bologna early in the twelfth a ntury He founded as chool at Bologna and at the instance of the Countses Matilda directed his own and his pupil s attention to the Instance and Code of Justinian He appears to have held some office under Henry V after 1116, and to have died under the Emperor Lothau before 1140 He is generally con adered the first of the Glossators and the author of an epitome of the Novella of Justinian called the Authentica See monograph by P Vecchio 1863 and F C Savigny Geschichte des romischen Rechts im Mutelalier, vol iii 1821 11.

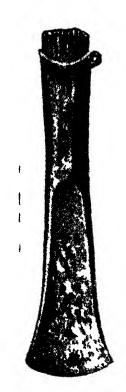
Iron, Ralph, see Schellen in in Celebrate in Medical Control of the Control of the International Control of the Internat

Iron, Ralph, see Schrits In Oliva.
Iron Age, third of the three technological ages of man formulated about 1836 by O J Thomsen a Dan curator demonstrated stratigraphically by his student Worsae in the peat bogs of Denmark and since generally by all archaeologists. These ages were not everywhere contemporary thus the 1 A began in Asia Minor e 1200 Be in central I urope about 900 Be in China shout 600 Be in Britain in the sixth and early influence the sixth and early influence and in the fights not until unexpedition there in the late numeteenth century. The economical wisking of iren particularly for use in acrost tools and weapons was a great step forward in civilisation and it was in fact the chief underlying cause of an urb revolution from which was to arise in organisation of labour and of foreign trade over a large area and the leginnings of city life and a political consciousness.

The earliest culture of the Inity IA meentral I wope is named after Hall-statt an exceptionally lich centery in I pper Austria which swithin forty in of Noreum one of the famous iron mines of uniquity Relies of both brenze and non-wer recovered an istages in the exclution of the sword in both met ils riovid du relative chronology. In the Hall-stat eaviest in in as a whole is exected insity complex is may be seen from a study of the various hybrid stocks which reached Buttum in the extra to fifthe entines be and complise equitions from a larly from Age A. The vil sites of All Cannungs cross Wiltshue Hengistbury. Head Hampsline scarborough Yorks have yielded type al pottory, and there are not able camps or hill either at the Irundle and Cassbury Sugsex, and Eigsbury Wiltship.

It may be noted here that the I A of Scandinavia is sometimes considered as four main period—the (eith I A from c 400 0 B c the larly I am I A from c 0 B c An 200 the late Rom I A from AD 200 400, and the term and I A c AD 300 800. The Viking Period, c AD 800 1000 is noted for its iron we apons, and notably for axes and swords inlaid with silver

Further Celtic immigrants to Britain about the middle of the third century B c brought much developed cultures, chicfly from the Marne in N France, named after a type site at Ia Têne ('the Shallows') on Lake Neuchâtel, Switzerland The var lous La Têne cultures grew from trading contacts made between the highly civiliyed unb peoples of the Mediterranean and the



HANDI FI 191 (Hall tatt)

Hulstatt farming munities N of the vice like used to extensively for allitary and housel id gear, and the metal smiths were billed traftanta as may be seen from such examples of their work in Britain as the Battersee Shild, the Witham Shield, and the Thames Helmit, all in the Brit Museum. The peoples of the Tron Age B. culture, as this is usually called in its wider aspect, were in

the main an aristocracy, but the six chief | the presence of a reducing agent such as groups which can be recognised differ much in their agric. domestic and military Among the important sites traditions. and relies in Britain are the murus gallicus and renes in Britain are the marits galiteus forts of Scotlaind; the charloteers of Yorkshire; the wealthy lake-vils. of Meare and Glastonbury with their fine wood-work and textiles; those of the Atlantic fin-traders and merchants of Cornwall; while the cultures of Wessex have recently been demonstrated in the brilliant excayation of the gizantic billfort of Maiden Castle, Dorset. Other re-markable hill-forts with strong defences of this period are Henbury, Devon; and Cadbury and Ham Hill, Somerset.

A third period in the Early I. A. is that

dominated by the Relgie culture of N. Gaul, which had itself grown by the pres-sure of the Celts and Germanic peoples of the Lower Rhine on the Marnian culture of La Tène. In Britain the Belgae arrived about 75 B.C., as adventures, then later as colonists. They were river-ude farming folk, and with their new equipment of heavy wheeled ploughs which dealt effectively with loams and clays, they were en-abled to follow up the clearance of woodland and to start an agric, revolution. The same ruler, Dividiacus, held sway both in Gaul and Britain at one period; there was a system of inscribed gold coinage; a flourishing export trade in corn, cattle and cattle-products, gold, silver, from and slaves; and the infiltration of Rom. civilisation secured the import of luxuries The cremation cemeteries of in return. Aylesford and Swarling in Kent with fine wheel-turned podestal urns and bronzes represent the sepulchral evidence. On the economic side of this final period of the I. A. is the foundation of states to re-place tribal groups, and the estab. of urb. caps.—Verulamium, (St. Albans), Callera (Silchester), and Camulodunum (Col-(Silchester), chester).

chester). The bibliography is extensive. See, generally, Brit. Museum (laude to Early Iron Age Antiquities, 1925. Authoritative works, with references, are T. D. Kendrick and C. F.C. Hawkes, Archeology in England and Wules, 1914-31, 1932; V. Gorden Childe, Prehistorie Communities, 1910; C. F. C. Hawkes, Prehistorie Foundations of Europe, 1940; Jacquetta Hawkes, Englu Religin, 1945 of Europe, 1940, and the Eurly Britain, 1945.

Iron and Steel. Iron (Symbol Fe, atomic number 26, atomic weight 55: 85)

is the fourth most abundant element on the earth. It is only very rarely found in the free state, and then mostly as moteorites which have come from other worlds than ours. Its more usual occurrence is in combination with oxygen as oxides, or with sulphur as sulphides (pyrites). Only the former are true ores of tron, as the latter is infrequently used as a source of extraction of iron owing to the high sul-

phur content and difficulty of removal. Iron ore, as mined, contains varying quantities of impurities, such as silies, alumina, lime, sulphur, and phosphorus, which have to be removed, as well as the oxygen, be-

fore malleable steel or fron is produced. This is almost exclusively done by heat in generations,

onke, charcoal or other carbonaceous material. Terrestrial iron was known early in the prehistory of Mesopotamia and Asia Minor; iron forging was perhaps discovered in Armonia where there are rich ores. The process had spread to N. Europe by 500 B.c. The purposeful repetition gave the first ironmester of an industry which today produces well over 100,000,000 tons of steel annually. Prehistoric man used iron for tools, weapons, domestic and horsegear, and particularly for agric. implements such as hoes and sickles.

The primitive processes of working gave a pasty semi-solid malleable metallic product in one operation. The small pieces of iron, weighing only a pound or two at the most, could be hummered into shape with the tools of the early craftsmen. Owing to its extensive distribution throughout the world, iron manuf, was widely carried out. Improvement on the crude forging process, improvement on the crude lorging process, though slow, was definite, larger units were built, more powerful blowing machines were introduced, until about A.D. 1300–1400 an unexpected result was achieved. Instead of the partly malleable product, a liquid metal flowed from the furnace, which was achieved as actions to the furnace. which was found, on setting, to be hard and brittle. This substance we now know as pig iron, and the reason it is so hard and brittle is that it contains about 4 per cent of carbon whereas the prior malleable iron was practically carbon free. The expert ironnuster soon found a way out of the difficulty by a further treatment of the pig iron in a separate furnace and thus there was the beginning of the presentday double process for producing steel or malleable iron. The iron ore which conmalicable iron. The iron ore which contains about 30 per sent oxygen is heated in a blast furnace with coke to produce pig iron, which contains no oxygen but 4 per cent carbon, the balance being iron. The pig iron is then heated in a steelmaking furnace to roduce the carbon to from 0 02 to 1.6 per cent carbon, which is the range of steels from very soft to very bear. hard

Sources of Iron.—Although iron is widely distributed throughout the crust of the earth, the prin. ores from which it is extracted are comparatively few. extracted are comparatively few. Among the more important are (i) Magnetite (Fe₂O₄) containing 72·4 per cent iron; a black ore which, in line with its name, is very magnetic; (ii) Haematite (Fe₂O₄) containing 70 per cent iron; its colour varies from bluish-grey to red, and one well-known form is the so-called 'kidney ores' of Cumberland; (iii) Limonite (2he₂O₄3H₂O) containing 59·8 per cent iron, it colour varies from various shades of Among iron, it colour varies from various shades of brown to yellow; and (iv) Siderite (FeCO₂), also known as spathic fron ore; contains 48:3 per cent iron; its colour varies from pale yellow to brown and grey.

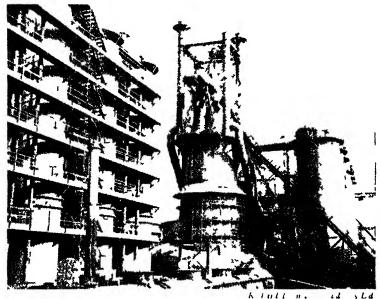
Pyrites (FeS.) is not really a source of iron as it contains too much sulphur to

allow a profitable extraction of iron from the raw material. It is a mineral which occurs widely and extensively throughout the earth's crust, but its development as a source of iron is a problem for future

EVOLUTION OF IRON AND STEEL MANU-TACTURE——In the Middle Ages pig from was produced in primitive black frunaces using the roal as fuel which was burned by an air black from bellows driven by water wheels the pig from was east into sand beds, allowed to go cold, broken up and then the second process of conversion to malleable metal was carried out in a separate furnace known as a charcoal refinery. One again the fuel used was charcoal, made by partial burning of wood with a controlled and limited acces

for production of wrought fron, but again only giving a semi solid spongy product. The blast furnaces of Darby's day in the late eightenth century had an output of 10 tons per week, which was considered colosed. Modern blast furnaces which have been diveloped from it have an output up to 1,000 tons per day.

I he major problems of steelmaking may be classified under two headings (1) heat, (2) is factory material able to resist heat from one does not react with carbonacous red) if g material until a temp of over



K / Ull n. id s.
BLGT HENGE FOR THE LECT CHON OF FIG. RON

The product of the refinery was a ! semi solid spongy mass known as charcoal iron or wrought iron, which was removed from the furnace by tongs and hammered into a solid bloom of malleable metal Later this bloom was reheated in a Chaf fery and rolled into billets, bars and other shapes. During the sevent enth century the growing shortage of wood for conver sion to charcoal caused the ironmakers to look Clarwhere for a possible source of heat Coal had been known for several beforehand and it seemed a likely substitute. Early experiments were not successful but eventually success was obtained by treating coul so as to convert it to coke in the same way as wood has been converted to charcoal. The char coal charged to the blast furnaces was re-placed by coke by Darby in 1760 The charcoal used in the relinery was also re-The

700 C is reached. I com t is it follows that man could not know non until he had a true how to make fire which in an open grite or camp live reaches a true of about 1,000° C. But pure 1 on does not melt until a true of 1.52° C, and it requires about 1,000° C, to get a proper superheat so that the metal cun flow during casting by burning coal and in at room temp in an open grate with forced draught it is suble to get about 1,000° C, which is full short of the melting point of pure from an accounts for the production of chartil iron and coke in the semi-solid pasty meltion. The fact that the blast far ince give liquid metal alose from the aboutton of 4 per cert carbon by the purion. This metal is not mallosble and melts at 1,250° C.

placed by coke by Darby in 1760 The five methods of producing the high charcoal used in the redinery was also replaced by coke and by long-finning coal colved at roughly the same period, by from this developed the Puddling process Resement in 1866, and Siemens in 1866.

of blowing cold air through molten pig iron This not only removed the excess 4 per cent of carbon but also other un desirable elements such as silicon and man ganese, and at the same time increased the temp of the metal from some 1300°C to over 1600°C The method used by over 1600° C The method used by Steiners is known as the Ligenerative principle. When coal or wood at room temp is burned by air at room temp in an open fire the maximum temp inchid is about 1000° C. The effect of putting a blower in front of the fire so as to create a good draught and force all the air into close concact with the fuel is well known. By this means temps up to 1400° C can be obtained but this is still not sufficient to melt pure iron Instead of using air at room temp Siemens tried out the idea of room temp Siemens tricd out the idea of picheating the air so that by stering off at a higher temp he expected to get a higher tinal temp in the furnace. His early experiments were unsuccessful until he combined the initial idea with another one-converting coal into a comanother one—converting cost into a com-bustille gas by burning it with a limit d air supply in a gas producer. He then preheated both this producer gas and the air for combustion to over 12:0° (and thus was able to start off work with an initial temp as high as can be obtained in the final temp reached an open grite after combustion was thus in the region of 1750° C The method of preheating the air and gas is known as the regenerative principle. The hot gases from the fur nace pass through two chambers, known as regenciators, in which brickwork is loosely stacked and to which the waste gazes give up their excess heat. On rewersing the furnace the incoming air and gas pass through these two chambers and increase their temp to over 1000° C before being burned in the furnace On passing out at the far end the waste gases reheat two corresponding chambers at that end. The stemens Regenerative furnace has proved by far the most successful way of producing steel economic ally I ketric are and electric induction furnaces have become which used for special types of steel. The temps possible in these two types are well in excess of the melting point of pure iron at 1.27° (

The development of the Integrated

Plant for the production of steel represents the most in portant recent a iv ince principle is to have the cold ovens for production of coke, the blast furnices for the production of pig fron, the stell making plant for the production of stell and the rolling mills for fabricating to slape, all on the same site. This makes for consider the same site able fucl conmy, as large quantities of heating gives are evolved from the coke ovens and I last furnaces as a by product Further leat is conserved by charging molten pg from to the steelmaking plant direct from the blast furnaces or, as 19 more usual after storing in a mixer, and

The method perfected by Bossemer was subtracted quantity of oxygen, steel is the more remarkable as it consisted simply iron plus a little carbon (0 04 to 1 5 per of blowing cold air through molten pig cent), so the fundamental action of steel making is to remove much oxygen from naking is to remove much origin round ore and replace it with a little carbon This is done in a preliminary stage of con-verting coal to coke, a primary stage of converting from ore to pig rion in blast furnacis, and a secondary step of steel making in Bessemer, Open Hearth, or electric furnaces

Production of Cole —Suitable types of coal are heated in coke ovens out of con coal are neated in coke ovens out of coal tact with sit, which converts the coal into coke and evolves large quantities of a combustible gas known as 'coke oven gas By products such as ammonium sulphate tar and crude benzol are ox tracted from the gas which is then passed

to the plant for use as a me ans of heating
Production of Pig Iron - I ig iron is produced in vertical shaft furnaces iron ore, innestone and coke being charged at the top and air blown in it the buse. An account of the process as carried out in 1531 cass 'There are five men who keep the fire to nielt the ore having 12 pence per day each And there are four men at the Bollows whereof three blows at a time and one of them stoude voyde to refresh and one of them stone vote to refresh
the others, for they blowth six or seven
hours it every gadde that is incling, and
thus they make two guide a day each
weighing 1 cwt In 1760, Darby re
placed the charcoul which had previously been used as tucl with coke Outputs by this improvement were increased to 11 tons for day. In modern blust furnace practice, output of 1000 tons per day are known

Ir in ere as inined is not pure iron and oxygen at contains varying amounts of silica line, alumina sulphur phosphorus and other extraneous materials which have to be climinated. Much of this is done in the production of pig iron in the blast furnice but there is an additional pick up of about 1 per cent carbon The effect of this is to produce a hard brittle product known as p g from which is subscriptently

treated to produce seed cost non-etc.

A modern blast furnice is a circular stack about 100 ft. high and with a maximum di uncter of 18 to b ft I here is a skip hast for taking ore, limestone, and coke fronthe bottom for charging through s bell and one at the top level. An blist is sufflied at the bac through tuyores from a powerful blowing engine and it is prefer to in Cowper stoves the idea of bot block the idea of hot blist being fir t developed by Nellson in 1528 The iron ore, huncstone, and coke write descending through the furnace meet the ascending current of hot air which turns the coke converts the ore to pig ucr, and allows the impurites to settle as a liguid slig floating on top of molten plr from At regular intervals the slag is tapped off through a slag notch and discarded, while the pig from is tapped through a separate iron notch and cither cast into pig beds or transferred while by charging hot steel ingots to the reheat ing furnaces for rolling Production of Steel from Prog Iron—Iron (astings—The pig Iron as origin—Essentially, Iron ore is iron plus a con-

melted in special air or cupola furnaces. where its carbon content is adjusted to the required amount, and other constituents such as silicon, manganese, sulphur and phosphorous regulated to the desired specification. The cupola furnace is similar in construction to a blast furnace, but is much smaller. It is charged at the top with coke and pig iron. A blast of air forced through tuyeres near the base causes the coke to burn, and develop-sufficient heat to melt the iron, which is tapped off through a metal spout into a ladle, from which it is poured into the moulds prepared to the shape of the casting required. Owing to its case of reating required. Owing to its ease of melting and fluldity when melted, the iron can be formed into intricate shapes in various sizes weighing from a few pounds to upwards of 100 tons. The various types of castings require different com-positions of metal according to the use to which they are to be put. For engineer-ing purposes the cast iron must be strong but not too brittle, while for ornamental purposes the main requirement is finidity in order that the metal may take a sharp impression of the intricate shapes. In other cases it is important that the finished easting should be willy machined. For engine cylinders the mon must have strength, hard wearing surface, and easy casting properties owing to the thin sections required in certain places. For couversion to malicuble eastings the iron should be low in silicon, giving a white tracture. The castings are malicablised by annealing in Iron ore. High duty cast irons are produced from specially refined pig iron, and may additionally contain alloying additions such as nickel, chromium, molybdonum, vanadium, etc. Cast iron pipes may be made by centri-fugal casting. In making chill castings such as rolls, the surface of the main body is rendered very hard by casting the metal into a cast iron mould instead of the usual

moulding sand.

Production of Wrought Iron.—Although the amount of wrought iron produced today is comparatively insignificant, yet it was the most important process for converting the hard brittle pig iron to a malle able product until steel manuf, by the Bossemer and Open Hearth processes became well estab, just prior to the start of the present century. In making malle-able metal from pig iron the essential process is to remove the excess carbon, process is to remove the excess carbon, sillcon, managenes, sulphur and phosphorus. This is carried out by exidation and the conversion of the exides thus formed into a fluid slag which can be separated from the metallic product. The difference between wrought iron and steel is that the former is produced in a semi-solid pasty condition much intermixed sond pasty condition inten internities with slag, while the latter is made in a completely liquid form and the separation of slag from it is virtually complete. Wrought iron is made by the puddling process. About 5 cwts. of cold pig from are charged into the furnace and melted

brings the bath up on the boil and much of the slag formed is boiled over the sill of the sing tormen is boned over the charge plate into a bugy. Later the charge begins to set back, boiling-over ceases, and then ' buddling ' commences. This is one then puddling commences. This is one of the most onerous jobs carried out close to a furnace at high heat for over half an hr. that has ever fallen to the lot of man. The pasty white hot metal is divided into four by pushing a rod through it, then each of the four pieces is turned and moved about in the furnace until it has reached a sutable state of malleability. The pieces. weighing about 80 to 100 lbs., are removed separately, and compressed by a shingling hammer to remove excess slag and formed into a suitable shape for further reheating and rolling.

PRODUCTION OF STEEL.-Steel is made by a variety of processes of which the most important are (1) Crucible, (2) Bessemer, (3) Open Hearth, (4) Electric Furnace. Except in the first case there is a further subdivision into Acid and Basic processes. As the difference between sold and basic is the same in all three processes, it may be briefly dealt with first. in an acid furnace the refractory lining, on which the thurse of pig iron and scrap steel is melted, is made of silica brick on top of which is firsted silica sand. In a basic turnoco the furnace bottom is lined with magnesite brick on top of which delomite is rangmed. Although the nature of the refractory used for the bottom is the only essential differential dif ence, yet it has a very considerable effect in removing impurities. With an acid bottom it is impossible to remove any With an acid sulphur or pho phorus; in a basic furnace their removal is possible. Acid steel is still made for special qualifies but the present tendency is to change over more and more

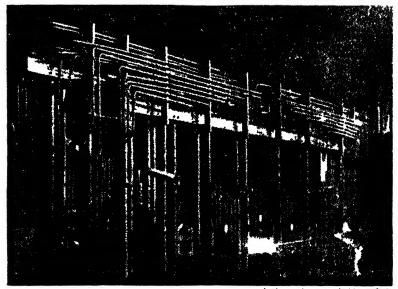
to the basic process.

Crucible Steel.-The Crucible Steel process was invented by Huntsman in 1740. It is still used, more particularly in the sheffield area, for making high gradesteels. As it is purely a melting process, with no reining, it is necessary to charge pure materials. The Crucible furnace is oval materials. The Crucion rumas of in shape and takes two pots side by side, in shape and takes two pots side by side, when the Crucible is hot enough, a charge of pollbs, of Blister steel is empried through a sheet-iron funnel and the cover put on. On melting, the charge is 'killed' with ferro-manganeso and aluminium and poured into a mould.

The Bessemer Pricess .- Bessemer took out his early patents in 1856, and within a few years the process was being operated successfully on a commercial scale. In this process, molten pig iron is converted into steel by blowing air through a Bessemer converter. The difficulties to be overcome in the early days arose from the fact that (i) it is necessary to blow vigoronsly through the molten metal right to its very core; (ii) blowing must only take place when the whole of the metal is in the converter; (iii) it must be possible to stop and restart blowing at will. The converter is pear shaped, lined with refractors, down in a lining which consists primarily containing holes in its base through which of iron oxide. On completion of melting air is forced at a pressure of about 25 lbs. the puddler lowers his damper which per sq. in. In operation the converter is

The air, in passing through the metal, removes carbon, manganese silicon and sulphur, and at the same time increases the heat from about 12.0° (as charged to 1600° C. During blowing there is a to 1600° C. During blowing there is a violent evolution of sparks from the

turned down to the horizontal and a the hearth of the furnace and inelted down charge of molten pig hou poured in, the by a hot flame produced by the combinair blast is then turned on and the continuous flame of pichested and This preheating verter turned up to the vertical position is done on what is known as the regenerat by a hot flame produced by the combu-tion of picheated air. This preheating is done on what is known as the regenerat ing principle. The wate gives coming out from one end of the furnise pass through loosely stocked brickwork to which they give up their heat Livery half bour the ducetion of flow of the gases is inversed and the incoming air and gas mouth of the converter, and the chan c in the pictuated to a high temperature composition of the metal can be tixed by (about 12:0° C). In this way it ame the appearance of the it wine. When the temper of 1::0° C are obtained when the



huhura ilomas c l'aldress & Lt1

STIEL MAKING I UI NACL SII WI NO OF EN HEARTH PROCESS

melter judges that the metal is correct the converter is turned down, the blast switchedeff, and the finished charge poured into a ladie before teeming into moulds The Besseiner process was not widely used in this country but had a ver onsiderable development on the confluent revent years, two large basic Bessemer plants have been erected in this country with satisfactory results

The Sumens Martin Open Bourth Pro cess—In Statems Open Hearth process
was per's ted by Sir W Stemens in 1866, and the first commercial plant for its production was creeted at Language Wales, duction was created at Lanco > Wales, in the following year. The original fur in the following year nace was about one ton capacity, and had a potential output of about 1000 tons per year. Today, shout 100,000,000 tons are made annually by this process. Cold pig iron and scrap steel are charged into moulds The pig iron used values from

two are combusted in the hearth of the functe. The steel is thus heartd to a temp of 1500°C which is the maximum gene ally required for low carbon steels Afte cl at molting, there is a quantity of m lien metal covered by a slag containing The tomaining impur the in purities mes in the metal are removed by feeding in n ore and scale or limestone until a suitable composition of the metal is ob tui red this is determined by takıng samples from the bath and testing them by chemical analysis. When the composition is con idered satisfactory, a tup hole is opened at the back of the furnace and the molton metal and slag is allowed to flow out into ladies. The metal is deoxidised to suitable condition by additions of forro manganese, ferro-silicon, and/or alumin ium I rom these it is teemed into 20 to 80 per cent, according to the required composition of the steel, an average figure being about 50 per cent each of pig

iron and scrap metal.

Electric Furnace Steels.—Electric furnaces may be classified into two types, (i) are furnaces, and (ii) induction furnaces. Of these, the former is much more widely In the arc furnace, heat is generated by a spark between the carbon elec-trodes and the charge of metal. The trodes and the charge of metal. The temp. of the arc itself is well over 3000°C., so that the local heat is very intense. Owing to the high cost of electric current required, the electric are process is more generally worked with a charge of 100 per cent of scrap steel, in order to cheapen the process. The charge is melted down m a manner similar to that in the Open Hearth process. It is further refined as before by additions of iron ore and lime-stone. Finally the modal is cast and teemed as before. The electric furnace is used in the manuf, of high grade steels, the basic furnace being more widely used as it has considerable advantage- in removing sulphur and phosphorus and producing 'Killed' steel comparatively free from oxide inclusions. It is improbable that the electric furnace with able to compete electric furnace vi, able to compete with the Besseiner and Open Hearth processes in the minut, of steel for constructional purposes and the more common uses, except under special conditions. It will, however, provo a scrious rival and will probably finally oust the older processes of steel making in high quality grades.

The electric induction furnace has been further advantageous in replacing the older crucible steel process. As in the erueible furnace there is no relining, and melted down by a high frequency induction current which generates terrific heat in the metal itself, and causes it to melt rapidly. At the same time the metal is stirred up so as to give very uniform com-

position.

Steel Castings .- These can be made from open hearth furnaces, both acid and basic, from small converters, from crucibles, and from the electric furnace. For general toundry work it is more common to find a small open hearth or Tropenus converter, fed with molten from a cupola. important to see that the metal is thorougly killed during the casting operation, otherwise difficulties are likely to arise due to the formation of blow-holes inside the casting. For steel castings the moulds used may be classified of ther as 'green sand' or 'dry sand,' the former being used for light eastings and the latter for heavier eastings. 'Green sand' moulds is the general term for those which have not been dried previous to the metal being poured in. 'Dry sand 'moulds are made much as above but are faced with moulder's com-

position and give a clour skin.

Straight Carbon Steels.—The properties of steel are considerably altered by varying the carbon content. In general, increasing carbon content from 0.01 per cent to

ductility and machinability. Some typical ranges and uses are indicated in the following table :-

Iron

Carbon Name Uses 0.01 0 08 Dead mild Sheets, tinplates. pipes, plates. 0.05 0.25 Mild Structural steels, teinforcing rods. 0 26 0 45 Carbon Rail steels, axles. 0.4) v.65 Medium Holding down carbon bolts. 0 6 , 0 9 High Drills and other rarbon tools, 0 9 1.5 Ultra High (Idsels, turning tools, files, can bon razors, etc.

Straight carbon steel can be hardened by quenching in water from a suitable temp between 750 and 950 C, according to arbon content. This hardening is accompanied by an embrittling effect which can be imminised by tempering the quaching steel to suitable temps, below. 700 c. The degree of tempering is controlled by the time and temp, at which the tempering operation is carried out.

illog Stels.-Steel has found a very extensive use in industry and commerce due to the fact that it is possible to produce such a wide range of properties by varying the carbon content and heat treat there are certain difficulties with straight carbon steels which have been called 'alloy steels,' i.e. steels containing considerable percentages of alloying elenumber of such steels on the market today is well into the thousands, but efforts were in the during the recent war years to reduce the numbers and so simplify producerucible futuace there is no reaming, and place the numbers and so simplify produc-pure metal is charged into the crucible and plan, and yet rotain the valuable properties which such stocks have conferred on them

by the use of alloying additions,
\[\langle it t \] Nikel steels, owing to their
strength, are widely used for stressed
puts \[\text{With earloon around 0 1, per cont} \] and makel 3-a percent, the so-call d'case-hardening steels' find a wide application in a avily-stressed parts requiring a very Laid outer surface and a touch core. With a somewhat higher carbon content and smaler nickel, the steels have many uses in engineering where both strength and toughness are required. High nickel steels containing 25 10 per cent nickel are used for their resistance to corrosion, special electrical properties, and due to the inct they are practically non-magnetic.

Chromium-Chrome steels are used because they produce greater strength and hardness. Addition of from 0.5-2.5 per cent chromium are typical. Such steels the used for tyres and springs. The addithe near for tyres and springs. The addition of 12-20 per cert chronium produces the well-known stanless stoels, first developed by Harry Brearley about 1913. Chrome-Nickel.—It is more usual to find both chronium and nickel, as the

combination makes for many advantages in hardness and strength combined with the carbon content. In general, increas case of heat treatment, to produce suiting carbon content from 0.01 per cent to able properties. In the stainless steel 1.5 per cent gives harder steels with a scries, the so-called 18/8 (18 per cent higher tensile strength but decreasing chronium, 8 per cent nickel) is widely used today, as they have the widest range of corrision resist int properties. They are also satisfactory as heat resistant steels. They have a wide use, but perhaps the best known is for table knives, where they have been a boon to the harassed house wife

1 anadrum -−Vanadıum generally pro ent in allow t els in relatively small amounts less than I per cent and more often less tain 0 2) per cent but this has an important effect in increasing the toughness of the stell. It has pethaps its widest use in chrome vanadium steels, which ar used because of their extra nestrength and tourhiess. A common analysis is 1 per cent chromium and 0 1) ent vinadium It is also a ided in small amounts to produce a high denter of hardness in tool steels, armour piercing projectiles rock drills etc. Varidium steel cistings are noted for their high elastic properties strength and bughliess. Malybdenum.—Nolvodenum is precent

in steels also in quantity a inder I per cent, and in association with the more common alloying elements such as nickel and chromum It has got a marked effect in increasing the strength both at room and chyated trups and in an im portant addition to remove a dim ulty known as temp r buttl ness. There is a fairly wide it igo if molybdenum steels each type having its own special application. Molybdenum from castings in used where a hard wearing surface is a quire l while it has also been found adv intageous

in chilled from rolls Manganese -Although manganese is present in all strught cubon steel to an extent of 0 3 1) per cent it is not considered as an alloying addition—the high the high manganese steels containing thout 12 per cent are true alloy sticks. They were put on the market by Sir Robert Halifeld in 1882, and have found in any uses due to their hardness and high resistance to we in They are quite commonly used for railway crossing points and for crushing michinery in wartime they were used for steel helmets. It is a non magnetic steel

Silicon -High silicon steels containing of to o per cent have important electrical properties—a high permeability with low hysteresis and eddy current losses they are used in electrical transformers—teels containing from 11 to 1 20 per cent have a high resistance to cor rosion by acids which enables them to be used for containing vessels. A silico manganese steel has found extensive uses for general engineering purposes and armour plate
2 ungsten — This element is used in high

speed tool steels and in magnet steels effect in high speed tool stocks is to retain the cutting edge while allowing the stock to reach a red heat. Ordinary carbon tool steels which may be hard a mitually are tempered under similar con litions and lose their hardness Modern high speed tool steels contain 15 to 20 per cent tung sten

Steels containing from 5 to 6 per cent have good magnetic properties and are used for magnets of generators, magnetos, etc.

Cobalt - Cobalt steels containing from 2) to 3) Iti cent cobalt give a magnet st el superior to the tungsten magnet steels

C pper -About 0 5 per cent coppor is sult to be beneficial in increasing the cor rosion resistance of ordinary mild carbon

uteels.

1 11 About 0 2) per cent lead is in cup rated with certain steels to improve ther mach in bility | I cad does not alloy with steel and it exists is dispersed globules themselve the metal | At pical steel of this class is known as | Ledloy '

5 alphur - Although sulphur at ove 0 08 per cent is reneially considered bad in steel making it hat short vet up to 0.3 per cent is alled in order to improve my final lits

SeeR Johans Helarly III try of Sted Walm pin I n Hand 1923 and Ir n maling in the I rest flown 1926 1 5 Ashton, Ir n ind Stel in the Industrial Accolution

In and Shelm the Industrial Accolution 1921. R. A. Hadfield I traday and his Welallur med Researches 1931. A. Allason Outline I Stelland Ir n. 1336. I Deardon Iron and Stell Loda; 1939. I B. Fortune and I. B. Mann, The Stry of Iron 1348. I Inobark-tree, popular name applied to see see its of I nee phas for a very obvious rewon. I resulting the red gum tree receives the name most often it attains a height of 130 to 200 ft in Australia and is noted for its hard back, durable wood and the gum which the said. durabl wood and the gum which it ox udes durible wood and the gum which it exides Ironclads, or grantly woo len ships protected by hon plates a used in 1752 at the sign of orbitists. The frused them in the Crimean was and in that time, built fene iron plated him of bittle ships. In 160 Britain built, the Warrior, and iron sheam battleshap with 44 in plates. Iron Cross, see Offices of KNIGHT

HOOD

Iron Gates, narrow passage interrupted by rapids and tocky shoals, in the course of th R Danube below Orvova (Rumania) In 1830 96 the Hungarian Gov at a cost of £300 000 succeeded in rendering the channel navigable by blasting and canal using A pilotage service is maintained here by the Danube Commission

Iron Mask, The Man in the mysterious figure of great romantic interest in Li hist He was a political prisoner in the reign of Louis XIV, who when travelling from one pri on to another, always work a mask He finally died in the Bestille in 1703. The mystery or his identity still remains an

historical problem

Ftienne du Junca (d 1706) lieutenant of the Bastille, recorded in his official journals that on Sept 18, 1698, Saint Mars the new governor, arrived at the prison from the lies St. Marguerite, bringing with him in a litter a prisoner whom he had formerly held in custody at Pignirol This prisoner always wore a black vivot mask, and his name was never told He died on Nov 19 1703, and was buried in the par cometery of Saint Paul, his name being register d as 'M de Marchicl. The name at utaily recorded in the register was 'Marchiely' Stories spread about the prisoner even during his lifetime, and in 1745 and 1746

it was asserted in Mémoires Secrets pour servir à l'histoire de l'erse that he was the duke of Vermandois, the illegitimate son of Louis XIV. and Mile, de la Vallière, and of Louis XIV. and Mile, de la Vallière, and was imprisoned for lite for having assaulted the grand dauphin. Public interest was further aroused by Mouly's romance, L'Homme an masque de fer, and by the writings of Voltaire on the subject. Voltaire, under the head 'Ana' in Questions sur l'encyclopédic, asserted that the 'Mask' was a bastard older brother of Louis XIV. and the son of Anne of Austria and Cardinal Mazarin. Abbé Soulavio, in Mémoires de Marchal Richtheu, made out a case for a twin brother of Louis XIV., but this theory is historically untrue, though it appealed to Grimm, Zschokke, Fournier, and others. A much more feasible conjecture is that

A much more feasible conjecture is that the 'Mask' was Count Mattioli, a minister of the duke of Mantua (b. 1640). He negotiated with Louis for the surrender of negotiated with Long to but the fir king, discovering that his dealings were treacherous, had him kidnapped (1679) and conveyed to Pig-But there was no secrecy about Mattioli's imprisonment, and it appears more than probably that Mattioli died at

Pignerol in 1694.

The mysterious precise has also been identified with Eustache Dauger, imprisoned at Pignerol in July 1669.
Andrew Lang, in *The Valet's Trapody* (1903), identified this Dauger with one Martin the valet of Parameters. Martin, the valet of Roux de Marsilly, a Huguenot intriguer in England. Barnes (The Man of the Wask, 1908) found Lang's theory untenable, and suggested that Dauger was really James do la Cloche, the natural son of Charles II. Lang proved subsequently that James de la Cloche was identical with 'Prince' James Stuardo, who died in Aug. 1669 at Naples.

As well as the works already mentioned, see a letter by Heiss to the Journal Encyclopedique, 1770; L. Duters, Intercepted Correspondence, 1789; Roux-Fazillac, Recherches historiques sur Unomme au masque de fer, 1801. J. Delort, Histoire de l'homme au masque de fer, 1825, and His toire de la detention des philosophes, 1829 (which contains the correspondence between Saint-Mars and Louvols); M. Topin, L'homme au masque de fer, 1870; T. Jung, La verite sur le masque de fer, 1873 and Barnes, The Man of the Mask, 1908.

Lung, see under AEROTHERA-PEUTICS.

Iron Mountain, cap. of Dickinson co.. Michigan, U.S.A., 16 m. N.W. of Escan-aba. Has extensive iron mines which produce large quantities of first-class ore. Lumber mills and Ford motor works. Pop.

Sir William Edmund, Ironside. Baron, Brit. soldier b. 1880. Was in the Brit. secret service in Ger. S.W. Africa during the Herero campaign, receiving the Ger. service medal for his good offices.

along the Dwina showed generalship of a high order. Commanded the Ismid Force, 1920; N. Persian Force, 1921; Commander, Meerut Dist., India, 1928-31; Colonel Commandant, Royal Artillery, since 1932; Governor and Commander in-Chief. Gibraltar, 1938-39; Inspector-General of Overceas Forces, 1939; Chief of the Imperial General Stuff, 1939-40; Churanniaran-Chief Home Forces, 1940. Commander-in-Chief, Home Forces, 1940; Fuld Marshal, 1910. He wrote Tannen-berg: The First Thirty Days in East Prussia, (1925).

Ironsides, nickname given to a man, particularly a soldier, who displayed great bravery. Edmind II., king of England, appears to have been the first in Eng. hist. to receive the name. It was applied to Cromwell, and later to his cavalry, those 'tiod-feating men,' whom he trained to from discipline. They were the chief means of the parl, victories in the

tick!

Ironton, co. seat of Lawrence co., Ohio, U > 1., on the Ohio R., 110 m, S.E. of Cincinnati. It occupies a central position in a productive mineral dist., abounding in non ore and bituminous coal. Pop.

15,800. ironville, eccles, par, of Derbyshire and Nottinghamshire, England, 3 m. S.E. of Alfreton. Pop. 3000.

Ironwood, name given to the wood of many different trees on account of its hardness and durability, and is applied to various plants in different countries. A good timber-tree of India is Mesua ferrea, the Nagas of I., and is a species of Guttifere. Sidero ylon incrine, a Sapotaceous plant, is the Cape I.

Ironwood, banking city of Gogebic co., Michigan, U.S.A., 6 m. S.W. of Bessemer. It has become noted by reason of the valuable deposits of magnetic iron ore and hematite which abound in the vicinity. It is surrounded by lakes and streams, where there is good hunting and fishing.

Pop 13,300.

iron Work. Iron, like bronze has been used for easting, but the purest use of iron in decorative art is to be found in wrought I W. Since early days from has been used for weapons of war, but, owing to the effect of rust on iron, little et by iron work is left to us. Iron appears to have been used by the Egyptians as early as 1500 used by the Egyptains as early as 1500 B.c., and on a large scale in Babylon after old B.c. for such things as bolts and hinges. The Assyrans used from a great deal for the framework of fortifications and the coverings of buildings, although with them iron was considered a precions metal and was probably scarce. The Hebs, used iron considerably, and the Phenicians made vessels of non with which they statues, while Plutarch writes of a polished from belinet which shope blue like siver. We know from writings that the Gks. fully appreciated the beauty of iron and knew about the casting, forging, He was appointed to ommend the Brit. Expeditionary force sent out to Archangel and inlaying of iron. They used iron for during the latter part of the First World such things as chariots, agric, implements, war. His conduct of the operations against the Bolshevist forces concentrated and jowellery were often made of iron.

The Roms, continued with I. W., using t The Roms, continued with 1. W., using the metal for armour, window-bars and grilles. Barbaric races used iron before they were conquered by the Roms., and continued to use it with greater success than their conquerors. Up to the fourteenth century I. W. was the work of a smith, and he made and decorated such things as grifles, door decorations, and hinges. During the fourteenth century, a change came over 1. W. The smith began to work the iron when cold, using file and saw, chirel and vice, whilst sheet iron also was cut and hammered into patterns. Thus came into being the armourer and lock-mith, who used heat for working the iron only in the preliminary stages, and who were capable of carving a statuette out of a solid lump of iron. This change over I. W. came from the E., and designs often more suited to wood and stone were carried out in iron. The Fr. Iron-workers produced after this time the best I. W., their work being both beautiful in design and delicate in nni-h. During the cen-turies that followed iron was used for such things as locks, door handles, screens, firebacks, knockers, grilles, gates, and railingand the designs used in the work included and the designs used in the work included scrolls, rosettes, leaves, flower-patterns (particularly the passion-flower), and horaldic devices. See C. Floulkes, Decorative Ironwork, 1913; J. S. Gardner, Ironwork, 1927-30; J. A. R. Stevenson, Din of a Smithy, 1932.

Irony (Fr. ironic, Lat. ironica, Gk. eipereta, dissimulation), a form of ridicule in which statements, apparently accepted, are held up to scorn, saying one thing and meaning another. A tamiliar example may be found in Pilate's question to the Jows, 'Shall I crucify your King?' (John Jews, 'Shall I crucify your King?' (John xix. 14). Socrates used this mode of speech and raised it to a philosophical fine art. Among Eng. writers Swift holds the

palm for abundant and apt examples of I. Iroquois, name given by the Fr. to one of the great confederations of the N Amer. Indians. The league was originally omposed of five thee, the Mohawks, Oncidas, Onondagoes, senecas, and Cay-ugas, called the 'Fro Nations,' and pro-bably dating from the sixteenth century. In 1715 the Tuscaroras were admitted to the league, which was henceforth known as the Six Nations. The Is, were undoubtedly the strongest confederation of Indians in N. America, and numbered, at that time, about 11,6-0, of whom 2150 were picked warriors. Their original home seems to have been round the upper reaches of the R. St. Lawrence, from which they moved south-westwards round the shores of Lakes Untern, Huron, and Brie and occupied the greater part of Upper Canada, the whole of New York State, and a large part of Pennsylvania, Ohio, and Michigan, while a section of them moved 5, through Virginia and Ten-nesse to the Carolinas. The league was strong enough, not only to hold its own against such hostile tribes as the Hurons and kries, but to extend its dominion over the Mohicada, the Nanticokes, Shawnees, Mississaugies, and other Algonquin tribes. In the border warfare

with the Fr., the I. always sided with the Eng., while their bitter encoules, the Aigonquins, fought for the Fr.; they also fought for the Eng. in the Amer. War of Independence. The Iroquelan stock, including Iroquels, Wyandot, Cherokee, and Klowa number 52,400 in the U.S.A. There are reservations in Canada. New There are reservations in Canada, New York, Oklahoma, and Wisconsin. They have made considerable social progress, adopting the customs of Rag. civili-ation and becoming, for the most part, Protestants, and attending the Eng. schools.

tants, and attending the Eng. schools.

See W. Halo, The Iroquans Book of Rites, 1883; J. C. Pilling, Bibliographies of Eskimauan, Stouan, Iroquoun Languages, 1888 (Washington); J. N. Hewitt, Iroquois Cosmology, 1929; A. Pound, Johnson of the Mohawks (1715-71), 1930; F. W. Seymour, Lords of the Valley, 1930, and C. Wissler, The American Intian, 1943.

19.18.

Iroquois Language, see under NORTH AMERICAN NATIVE LANGUAGES. Irradiation. When white objects or ob-

Irradiation. When white objects or objects of a very bright colour are seen on a dark ground they appear larger then they dark ground they appear larger than they really ale. This phenomenon is called f. Thus a white square on a black ground seems larger than an exactly equal black square on a white ground. The pheno-menon dufers very much in different people and even in the same person on different days.

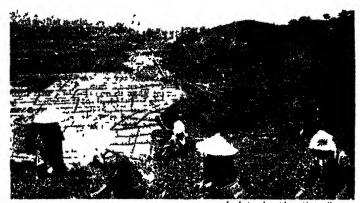
Irrational Numbers, see SURDS.

Irrawaddy, see IR(WADI. Irradenta, 1t. patriotic and political society which was particularly active im-mediately after 1878, when it had for its avowed object the liberation from foreign rule of all ters, outside the boundaries of rule of all ters, outside the boundaries of Italy, in which, it was claimed (sometimes wrongly), the lt. Tongue is spoken univer-sally, i.e. S. Tyrol (Trentino), (tôrz, Istria, Truste, Tessino, Nice, Corsica, Maltu. It became of little importance after the Fr-occupation of Tuns in 1881, when Italy formed the Triple Alliance with Germany and Austria

lirefragabilis, Doctor, see ALEXANDER OF HALES.

hrigation, see also DRY FARMING. hrigation (Lat. in and rigare, to water) the artificial application of water to is the artificial application of water to land, as contrasted with watering by manual labour. I. is of great antiquity, as is shown by many I. works in India, 5 xypl, and China. (See also under IRAQ). No face of scientific I. is found in the sculptures and paintings of anct. Egypt, but in works of as early a date as 2000 B.c. the practice of baling up water is repre-sented. Among the simpler forms of water-reising machinery the following may be mentioned: a pole with a bucket may be mentioned: a pole with a bucket at one end of a crossbeam and a counterpoise at the other (known in India as a denkii,' or 'paecottai,' in Egypt as a 'shadof') largely used in the Niie dist; rude waterwheel, consisting of earthen pots on an endless chain which runs round the wheel, is termed a 'sakya' in Egypt, and a 'harak' in N. India. By means of this a pair of oxen can raise water as far as 18 ft., and keep from 5 to 12 ac. irrigated. 'The 'churras' of India is a large leather bag, suspended from a rope which passes over a pulley and is raised by a pair of bullocks which go up and down a slope equal in length to the depth of the well. I. which is effected by means of canals naturally depends on the discharge of the riv. In connection When the riv. of the fiv. in connection. When the fiv. saries very much in vol., being very low in the dry season and flooded in the wet, a complete control of the water is necessary for the engineers, and the canal is therefore yet; ostly. Such is the system on for the engine of the system of the Cuttack Canal, in connection with the Mahanadi R. The can its of Lombiardy,

electric power Today the USA, ranks third in the irrigation countries of the world India has about 35 million ac.; China about 50 millions, and the USA. over 20 millions In Igypt I. works have been been carried out on a very large scale the delia formed by joining Carro, Rosetta, and Damletta is interacted by many channels, and much benefit his resulted Lower Igypt has been irrigated by a dam constructed at Assut in 1902, which however, falled in very diverserous which, however fuled in very dry seasons The difficulty was partly met by raising the height of the barrige so as to hold on the other hand, are much is secostly, as there is no great variation in the rive on which they depend, the Luno and Adda, struct a feeding lake. This was accommoding to the restaming influence of plished by constructing the Aswân Dam Lakes Maggiore and Como. The canal at rest of \$1,000,000 and thus creating a



rom In I itus I and ' tr Il G

IRRIGATION IN TAPAN Beyond the tea pickers can be seen the small to 1 from which the buley crop has be harvisted and which are flooded fir here purn of the rice shoots

system of N Indu contains works of ite cive of 1000 million time of vater. The hydraulic engineering unsurpassed in onv In the 5 of India I is always country. In the 5 of India I is always required for the me and sugar cane crops though make and mulet can be grown without any such aid. Generally speak without any such aid Generally speaking, the other dists of Indiacian manage without I, in good vers. When most of the ruln-watered in 15 of the U.S.A. had been taken up by settlers, the problem of the so-called arid lands came into promin once. There were vest uses in the Middle ence. There were that head in the mindle and far W states and in some pures of the S, states, deficient in water—(empanies were formed solely for irrigation purpose-and to fix services to intending settlers, and under the Reclamation Act of 1903 the U.S. Gov. set aside a sum from the sale of public lands to finance great irrigation projects. Water rights were then sold to the settlers. In many places enormous dams have been built, and these, in turn, hary for vegetation, but fertilises the oil have proved valuable, because of hydro-by furnishing such mineral constituents

m come dam at Alicinte, or the Monegre R dites from 17.9, and is a dito have a capacity of 130,000 000 cube fit of water in Italy. Spain, and in the S of France I. Is extensively carried on The newly constructed Hume Reserver, at the junction of the Nurray and Mitta little live, stores
Il million oubic ft of witer which runs
of a citchment area of 6000 sq. m. of mountainous country in the border of Victoria and N - W (see MURRA) hiver. Experience has shown that for su cessful I. a thorou h system of drain in in conjunction their with is a necessity this principle was overlooked at first in modern works, and the complete satura-tion of some dista in consequence had a prejudicial effect on their fertility, toenerally speaking the water used in I. not only supplies the moisture so necesas salts of potash and soda, sulphates of lime, soluble silica, etc. In propor-tion as the water is rich in these, the effect on the soils is similar to that produred by a dressing of bone-manure. Sewage water is unquestionably even more valuable for irrigating purposes than ordinary water, owing to the large amount of putrefied animal and vegetable matter contained therein. The drainage of many tons, is thus turned to a profitable use at the present time. Various systems of I, are used to suit the special requirements of the case, one of the following being generally used in England: (1) Bedwork I.; this is the most effective system, but is also the most costly. (2) Catchwork I., in which the same water is used many (3) Subterraneous I., in which the water is drawn up through the soil to the surface. This is applicable only to level surfaces. (4) Warping I., in which the water is allowed to stand on the land until it has deposited the mud, etc., contained in it. The proper management of watermeadows requires great care and skill. There must be neither too much nor too little water; the flow must be regulated

with exactitude, etc.

Irrigation problems of the British Empire.—It was estimated by F. S. Harris (Soil Alkali, New York, 1920) that in 1920, about 100,000.000 ac., or 7 per center that the state of of the total area of the earth's surface under cultivation, was farmed by I. Sinco that year thousands of additional acres have been added, and it is thought that the area of land under I. will continue to increase. This is probable because nearly one-third of the earth's surface receives only 10 in. of rain or less annually, and over another third the rainfall is between over another third the rainfall is between 10 and 20 in. Over most of this latter area little if any additional water is needed, except for intensive crops, although special nfethods of cultivation, aimed at moisture conservation and known as 'dry farming' have to be adopted. But on land receiving less than 10 in. I. is generally essential if any kind of profitable crop production is to be undertaken. The geographical distribution of regions of deficient rainfall comprises a considerable proportion of the Brit. Empire and its able proportion of the BHL Empire and its mandated ters, (particularly N. Tanganyika). The main areas concerned are parts of Canada W. of the 100th meridian; N.W. India up to the Ganges; most of Australia; Palestine; considerable portions of S. Africa; N. Tanganyika; and the Sudan. Within these areas the supply of Inventor is conversely for unable formula. of I, water is necessary for arable farming. The successful development of a stretch of land for 1, farming and the maintenance of the fertility of the soil involves a constant attention to economic, engineering, and scientific factors. The engineering problems connected with the construction of dams, main and branch supply canals, drainage ditches, and pumping stations, like the economic factors, are specific to each dist, and are executed in accordance with fixed principles. The scientific fac-tors comprise the questions of the com-position of the water available for I. and

properties of the soil. They apply not only to the development of new areas, but also to the maintenance of the fertility of existing I. areas. The scientific factors relate to the concentration of soluble salts (sulphates, chlorides, nitrates and car-bonates of sodium, potassium, and mag-nesium, and chloride and nitrate of sodium) in arid conditions; the effects of soluble salts on soil fertility and on the physical state of the soil; and the tolerance of vegetation to alkali conditions. The complete cycle of soil changes which are traceable may proceed rapidly or be so slow that a noticeable change occurs only over a considerable period of years; but sooner or later the danger of deterioration confronts every irrigated area. Thus the famous irrigation of the Nile Valley, where fertility has been maintained for centuries, now appears to be showing the first signs of deterioration owing to a change in cultural methods. In the old or basin system of I., after the winter crop of wheat or bersim, the land remained fallow from May to Aug. Economic factors, in particular the extension of the area under cotton and maize, have necessitated perennial I., the necessary water for these summer crops being held by the Aswan dam and delivered as required. Under this system the frequency of the sheraqui or summer fallow period is much diminished, with the fallow period is much diminished, with the result that difficulties in cultivation and decrease in yield of the more sensitive crops are beginning to creep in. A. Howard and ti. L. O. Howard have summarised the principles underlying water saving for the wheat crop in India as follows: (i.) I. water must be spread over the largest possible area; (ii.) it must interfere as little as possible with the natural aceration of the soll; (iii.) heavy waterings reduce the proportion of grain to total crop and increase the growth period; (iv.) a limited water supply encourages deep root development; and (v.) the soil moisture must be conserved as fur as possible by a surface mulch of as far as possible by a surface mulch of dry soil. The problems of I. in the Brit. Empire are being faced in different ways in different parts; but it is evident that I. is not simply a matter of providing a water supply; it necessitates constant vigilance by soil experts, otherwise de-terioration sets in. See B. A. Keen, Memorandum on Irrigation Practice and Problems (Empire Marketing Board pam-

Problems (Empire Marketing Board pain-phiet), 1927.

See Sir C. C. Scott-Moncrieff, Irrigation in Southern Europe, 1868; W. Willcocks, Egyption Irrigation, 1899; R. Buckley, Irrigation Works in India, 1905; Sir Hambury Brown, Irrigation: its Principles and Practice, 1907; F. E. Kanthack, Irrigation Engineering, 1921; E. Hawks, Wonders of Engineering, 1929; O. Israelson, Irrigation Principles and Practice, 1932; E. Hill, Water Into Gold, 1937.

Irritability in Plants, or Sensitiveness, is the manner in which they respond to the action of external forces such as (1) grav-

action of external forces such as (1) gravwith fixed principles. The scientific factory ity, (2) light, (3) mechanical contact or tors comprise the questions of the composition of the water available for I. and gravity is known as geotropism, and to the chemical composition and physical light, hel otropism; and members are

positively or negatively geotropic or belictropic according as they grow towards or away from the force. Thus roots are negatively heliotropic and positively geotropic, and shoots are just the reverse. Instances of irritability to contact are the leaves of the sensitive plant sundew, the stamen of Berberis, and the lobes of the stigma of the musk, which close together when touched. Response to presence of moisture is shown by growing roots, which are said to be positively hydrotropic.

Irritant Poisons, see under Poisons.

Irsina, tn. of Italy, formerly known as Montepeloso, 24 m. N.E. of Potenza in the prov. of Basilicata. Pop. 7600.

Irthlingborough, par. and vil. in North-amptonshire, England, on the R. Nen, and 2 m. N.W. of Higham Ferrers. It has large ironstone quarries, and manufs. of boots and shoes. Pop. 5000.

Irtisch, or Irtysh, riv. of Siberia and a trib. of the Ob or Obi. It rises in the Altai Mts. of China, flows N.W. through Lake Zaisan, and joins the Ob 180 m. N. of Tobolsk. It is navigable during about eight months in the year for some 2000 m. Length 2500 m.

Irulas, tribe, numbering in all about 86,000, dwelling it the Nilgiri hills, Arcot, the forests of S. India, and other places in

the vicinity.

Irun, tn. in the N.E. of Spain, in the prov. of Gulpuzcoa, on the l. b. of the Bidassoa. It was a garrison tn. and the most important custom-house in Spain: but suffered tragically in the Civil war being almost wholly destroyed, in 1936, in the struggle for San Sebastian. There are tories. Pop. 12,000.

Iruha, see Pamplona.

Irvine: (1) Par., royal burgh, and seaport of Ayrshire, Scotland, situated on the R. Irvine. Its prosperity has increased since the improvement of the harbour in 1873. It has an academy, a tn. hall, a statue to Burns, and is the bp. of James Montgomery, the poet, and John Galt, the novelist. Elizabeth Buchan founded here her religious sect, the Buchanites, in 1779. I. exports fron, coal, and chemicals. Ship-building is carried on, and there are engineoring works, steam saw-mills, tanneries, iron and brass foundries. Pop. 12,000. (2) Riv. in Ayrshire, Scotland, which rises on the borders of Lanarkshire, flows W dividing the dists. of Cuuningham and Kyle, and empties itself into the firth of Clyde. Length, 30 m.

Irving, Edward (1792–1834), Scottish divine, b. at Annan. Dumfriesshire. Having been educated at Edinburgh Univ., he became a master at Haddington (1810) and at Kirkcaldy (1812). He here tanght Jane Welsh (afterwards Mrs. Car-lyle), and fell in love with her, but he was already engaged to a Miss Martin, whose already engaged to a Miss Martin, whose family prevented him from breaking off the contended and the engagement. In 1815 he obtained a licence to preach from the Church of Scot-cland, and four years later became an assistant to Dr. Chalmers, then in Glasgow. In 1822 I. became the minister of Cross Street Chapel, Hatton Garden, London, and his sermons became extraordinarily Becket at Drury Lane, where he was

In 1823 he pub. For the Oracles popular. of God and For Judgment to Come, in which he declared his belief in the second perhe declared his pener in the series sonal advent of Jesus Christ. His popularity waned as his views developed. His belief in Christ's oneness with men in the attributes of humanity was misinterpreted, and he was accused of imputing sinfulness and he was accused of imputing sinituness to Christ. In 1830 he was tried before the London Presbytery, and two years later was deposed from the ministry. In conjunction with Henry Drummond he estab. the 'Holy Catholic Apostolic Church,' the adherents to which came to be known as 'Irvingites.' He and his followers made a particular study of the Apocalypse, and recognised orders of apostles, prophots, evangelists, and angels. I. became 'chief pastor 'of this new sect's first church in Newman Street, but died shortly afterwards in Glasgow. His complete which the contract of the co snortly atterwards in Glasgow. His complete works were pub. in 5 vols. by Gavin Carlyle (1864-65). See Carlyle's Reminiscences, 1881; and biographies by W. Wilks, 1854; and Mrs. Ollphant, 1862. Irving, Sir Henry (1838-1905), Eng. actor, whose original name was John Henry Brodribb, was the son of a Somersetshire tradegman, who atterwards and

setshire tradesman, who afterwards set-tled in London. The boy's tastes always inclined to the stage, and, while he was a city clerk, he took lessons in elecution, fencing, and dancing, and devoted such leisure as he had to reading and studying plays and frequenting the theatres. At the age of eighteen he threw up his job and secured an engagement in a stock company at Sunderland and, later, and the state of the company at Sunderland and, later, another at Edinburgh. He remained in the provs., learning his art, until 1866, when he made his London debut at the St. James's Theatre as Doricourt in The Belle's Stratagem. At the same theatre, in the following Dec., he played Petruchio to the Katherine of Ellen Terry. He was now tirmly estab. as a London actor, but he did not achieve any marked success until 1870, when his performance of Dighy Grant in *The Two Roses* made him popular. His Alfred Jingle in *Pickwack* added to his laurels, but he first became famous then he absend to The Zillast the Version of the laurels. when he played in The Bells at the Lyceum (Nov. 25, 1871). In 1874 he played Hamilet for two hundred nights, and with this performance, around which a con-troversy arose as to his rendering, he rose to the head of his profession. Four years later he became manager of the Lyceum, and, with Ellen Terry as his leading lady, made it the first theatre in the country. His prin. successes were Hamlet, Shylock, Benedick, Malvolio, Dr. Primrose (in Olivia), Landry (in The Dead Heart), King bear, Becket (in Tennyson's play), and Corporal Brewster (in A Story of Water-loo). I. was not a good man of business; his production expenses were heavy, his generosity unbounded, and when in 1898

604 Irving

again, but his health was broken, and after a performance of becket at Bradford on a performance of Beart at Bradford on Oct 13 he collapsed and died a few hourslate. He was builed in Westminster Abbey. I was the greatest figure in the theatised world of his day. He had many manner my but against these he had dignity and a preat conception of tracedy I conception of the art of the the tree differed fundamentally from that of G B shaw who was then a promise of the contents of the con drimatic critic, and for details of this rather controversal matter one should consult both Gordon Grugs Henry Irving and Shiw a Letters to Fllen Jerry (1931) His don nant quality was magnetism not that of all mastering cloquence, for his voice was neither to on int nor strong but rather et passionate vet quiet intensity He had strongly marked physical handi cops this troubles with spech were not confined to the weakness of his voce, for there was also the strange pronunciation which he adopted in moments of excite ment, as Gud' for God and inter ment, as Gud' for God und interpolated grunts and groins, all of which lent them elves to link que I ut these disabilities he overcire in the end by patient effort and towards the latter part of his life he was a model of picase diction But he could never endow himself with a fine voice of great physical strength hence, while his finalet and Ruch and Ha and lago and shylo k were perfect his Ma both and I cuttle ugh both splendid tred him out, and his Othello was ilest a fulure. I had a loyal and must a fulure I had a loyal and generous aide to his nature and as a man

was the embalment of courtest and dis-tinction. He was eggest man as well as a great actor and it was often said of him that he would have risen to emmence if he had followed any other profession But it is impossible to imagine him in any other for all his thoughts all his deeds all his very being were concerned with his withing and his the tire I was the first actor to be offered a kinglished and after having declined it welve y us earlier in 1835 he as eated the honour either in 1895 he a cyted the honour fle mixed the daughter i surgeon Gen Dim 1 () thighan in 1 () but they cynited five years liter I day I (who died in 1955) was the 1 th 10 flenny Brights for the sex lives in lating those by Brian 8 ker, 1906 A 1 riter 1 108 and 6 denering 1930 S d Henry Irvine in A tot of Gerra tilk by Philip (in myns cut in 11e Irsteau Oct 21 1);

Irving, Henry Brodribb (1870-1919)

Irving, Henry Brodribb (1870-1919)
Ing at t b at Payswett I ondou
olders u of Sur Henry I (2) Fdu
oted Multorough and N w foll ge
(extend Multorough and N w foll ge
(extend He w) collect to the I u in 1891). but hid priviously acted in the Garrak Theatre est of School, Sept 1891 He joined for Greet's company and met Dorothe Burd whom he mained in 1896 He repeated many of his father a parts, but added a reputation in comedy—e g Australasia, 1911

enthusiastically received. He went on tour of his life lessee of Savoy Theatre hobby was criminology be wrote Life of Judge Leffreys (1898) Loch of Remark able Criminals (1918) Last Studies in Criminology (1921) See A. Breicton, H. B. and Laurence From 1922

Irving, Laurence Sydney Brodribb (1871) 1111

Irving, Laurence Sydney Brodribb (1871-1914) I my actor vounger in of Sir Henry I Educated at Mailboreugh and in Laris Houcated at Mailborough his mother and spent three your there His first appearance on the stage was at Din keen 1891 under Benson Wrote Peter the Great for his father 1898. His best impersonation was Lurl Skule in Luphon by Michiner Lengyl. Land his wife (Mabel Huckney) were drowned in the sulling of the striner Imprise of Ireland in the St. Lawrence R. on Mry 29, 1911

Irving, Washington (178 –1959) Amer author b in New York of a fither who claimed a Softi hadecent and of a



WASHINGTON IRAING

Could hamother. He was given an indif-terent education after which for his health's sake he visited I urope before setting down in the city of his firth After some essies in the monthly period in its dimagunal he pub in 1800 a History of \c Yorl, by Diedrich Knickerbocker, in idmirable builesque In 1815 ho of $N\epsilon$ came to kingland where he remained for many vers, and he soon became dependent on his pen for a hychhood. His Sketch Look appeared in 1820, and was well received on both sides of the Atlantic, his hip han Hinkle and Hestminster 1bbe; being singled out for especial pinese this was followed by bracebridge praise this was followed by brachridge Hall (1822), and Lales of a Traceller (1821) As the result of a sojourn in Spain he wrote the tife of Columbus (1828), The Conjuest of Grand la (1829), The Alhambia Crichton the butler in Barrie's Admirable (1832), and other works, which were very Crichton, 1902. Acted in America, 1906, popular I returned to New York in Australasia, 1911. For the last six years 1832, where he was enthusiastically welcomed. His later books include biographies of Goldsmith, Mahomet, and Washington, and Recollections of Abbotsford and Newstead Abbey. He had the and gift of style in no small degree, and in all is work there is charm, but he is seen at his best in his shorter efforts. His fame rests mainly on the Sketch-Book. The best ed. of his works is the 'Geoffrey Crayon' in 26 vols. (New York, 1880). See lives by his nephew, P. M. Irving, 1862-64; (4. S. Hellman, 1925; see also S. T. Williams (ed.) it ashingen trains 1862-64; G. S. Hellman, 1925; see also S. T. Williams (ed.), Washington Irving and the Storrows, 1933; Van Wyck Brooks, The World of Washington Irving, 1946.

Irvingites, see IRVING, EDWARD, and CATHOLIC APOSTOLIC CHURCH.

Irvington, th. of Reser co., New Jersey, U.S.A., 3 m. S.W. of Newark. It manufs. tools, ropes, steel, wall-papers, etc., and has smelting-works. Pop. 55,300. Irwell, riv. of Laneashire, England,

rising 2 m. S. of Burnley, and flowing, in a rising 2 m. s. of Burnley, and nowing, in a tortuous course of 10 m., through Bacup, Rawtenstall, Bury, and Manchester, to the Mersey at Irlam. The Manchester Shi Canal is now included in the lower part of its course. Length 10 m.

Irwin, Edward Frederick Lindley Wood,

first Baron, see "I Marca Viscount". Irzykowski, Karol, (b. 1873), Polish writer and literary critic, b. at Blasz-kowa. In his Paluba and Dreams of Maria Dunin, which appeared in 1904, he showed himself a precursor of Proust and Freud. His earlier and precocious books were follawed by Poems and Drames (1907), Decil Knows Where (1922), and various essays and studies. In later years he devoted himself to literary criticism.

Is, see Hir. Isaac, only son of Abraham and Sarah, b. in their old ago (Gen. xvii. 17). For the story of his being offered as a sacrifice and the miraculous intervention of Jehovah see Gen. xviii. When forty years old he married his cousin Redecca, who bere him twin sons, Esan and Jacob. He seems to have lived a peaceful, uneventful, nomadic life, and to have died in Hebron at the age of one hundred and eighty. See ABRAHAM. See also G. Rawlinson, Isaac and Jacob (Men of the Bible series), 1890.

Isaac I. (Comnenus), emperor of Constantinople (1057-59), the first of the house of Comneni. He had served in the army, and on the deposition of Michael VI. was declared emperor by the soldiers He repaired the finances, forced the clergy to contribute to the state revenue, and to contribute to the state revenue, and repolled the attacks of the Hungarians in the N. In 1059, being overcome with a serious illness, he abdicated and retired to the monastery of Studion, where he died in 1061. His Scholia and other works on Homer are extant.

lasac II. (Angelus), cunperor of Constentinople (1185-95 and 1203-04), succeeded Andronicus I. In 1197 his brother Alexius seized the throne by force and I. was blinded and imprisoned. Eight years later he was restored to the throne, but was too weak, mentally and physically, to rule, and died in 1201, shortly after Mourzouphes, his general, usurped the

throne.

Isaacs, George Alfred (b. 1883), Brit. politician and trade union official, b. in Former member of the council, London. and mayor of Southwark. Elected Lab. member of Parliament for the Grave-end div. of Kent 1923 24 and for Southwark (N.) in 1929-31 and since 1939. Parl-private secretary to the Lord Privy Scal in the second Labour gov. (1929) who had special charge of the unemployment prob-Also parl, private secretary to the scretary of state for dominion attairs (1939) and, on the advent of the first national gov., acted in a similar capacity to the leader of the Labour opposition. Member of the executive of the Trades thon Congress, 1931; parl. private scretary to the first lord of the Admir-alty, 1912-15; P.C. 1915. Member of the Royal Commission on Workmen's Compensation, whose recommendations resulted in the passing of the National Insurance (Industrial Injuries) Act, 1916, Secretary of the National Society of Operative Printers, and Assistants (Natsapa); past president of the Printing and Kindred Trades Federation; chair-man of the Trades Union Congress General man of the France Union Congress General Council, 1915: president of the World Trade Union Conference, London, 1945. Minister of Labour and National Service since 1915. Editor of National Journal, Pub. Phys Story of the Newspaper Printing Pages 1935. Pr. 88, 1931.

Isaacs, Sir Isaac Alfred (1855-1935), Australian lawver and statesman, b. and educated at Melbourne. Admitted to the Victorian Bar, 1880. Q.C. 1889. Member of Legislative Assembly, Victoria, 1892. Solicitor-General of Victoria, 1893, and Attorney-General, 1894; entered Commonwealth Parliament, 1901. Was a member of Convention which framed Commonwealth Constitution. Attorney-General. Commonwealth of Australia, 1905. High Court judge, 1906. Knighted, 1928. Chief Justice, Australiar Commonwealth, 1930-31. Governor-General of Australian lawyer and statesman, b. and wealth, 1930-31. Governor-General of Australia, 1931-36, he being the first

Australian to be so appointed.

Isaacs, Jorge (1837-95), Colombian poet and novelist: b. at Cali: son of an Eng. Jew turned Christian and planter and married to a Sp. woman. Aftenued school at Begota; at sixteen went to London to complete his education. In 1864, his first vol. of pooms was enthusiastically received. In 1867 he pub. Maria, an adultic romance, somewhat autobiographical. Filled a diplomatic post in chile. Was a member of Congress, and director of public instruction at Ibague where he died.

Isaacs, Sir Rufus Daniel, see READING, MARQUESS OF.

Isabela : (1) N.E. coast prov. of Luzon. Philippines, area 5394 sq. m. It is mountainous and covered with forests. Coffee, sugar-cane, rice, maire, and tobacco are cultivated, and cattle-raising is carried on. Pop. 76,000. The cap., Ilagen, is 150 m. N.N.E. of Manila. (2) Trading centre in Pueblo, Negros Occidental prov., Philippines, 37 m. S. of Bacolod. Pop. 13,000, (3) Vil. and port on the N. coast of the republe of Haiti, W. Indies, and 36 m. W N W of Suntago Founded by Columbus (1493), the flist I uropean settlement in the New World (1) A the on the N W coast of Puerto Rico W Indies, 10 m N F of Aguadilla in the prove of that name Pop 23,068

Isabella (1292-13) S) daughter of Philip World France, and wife of Edward II of

of France, and wafe of Fdward II of I ngland, whom she married in 1308 She sided with the barons against Edward and the Despencers, and in 1326, having been sent over to France to settle a dispute between her husband and her brother the 11 king, she collected forces and, being joined by Roger Mortiner her lover and other larons attacked and defeated the king who was probably put to a cruel death. She and Mortimer ruled supreme for time, but in 1.50 I dwild III had Mortimer executed and imprisoned his mother in Castle Rising for the rest of her lıf•

Isabella (11)1-1 01) Queen of Castile and I con (1171) wife of leidinand V of Aragon Her marriage with Ferdinand united the crowns of Castile and Aragon Ten yeas later they occupied the throne of all sports. of all Spain Her fither and mother were or ni spain intertitied the motific very both descendants (1 lohn of taunt of I ngland she sympathised with Columbus a ambitions of the Plunket I sakella of Castile and the Making of the Spaintsh Vation 191) and life by X spaintsh Vation 191)

Spanish Nati Wittlin, 1936

Isabella II. (1830 0) b in Midrid was the eldest daught to the Leading of the Midrid Queen of Spain at the age of three in the death of to repeal the Salic law Her title was disputed by I erdinand Don Culos and her reign was one continual su cession of qu'u reign was one continually it ession of quarcis and intigues. In 1846 she marted her cousin Prince I tracisco de Assist de Bourbon (1822-1902) from whom she separated in 1870. In 1808 she had been fored into exile and ibducted two versalter in favour of her and ibducted two versalter in favour of her a Alph mso XII See Pale Legale I de II II he na de I spina, (2nd ed.) 11.

Isabay, Jean Raptice 176. 19. 15.

Isabey, Jean Baptiste 176 18 3) Ir portrut painter but Nory He studied under Dumond and David and was em ployed it Versailles where he painted the portraits of most of the celebraties of his time. He punted many of the revolution iries including Burero and Saint tion tiers including stated and same fust and was petronicd in time by apoleon and Josephine in the the Bourbon socceties. Apart it in partialts, his best known works are I above Bout 1796 and Review of I og by the First Con ul. See his by M. I. Lugny, 1809.

Isæus, Attu orator, son of Diagor 14, b at Chilers in I uboa He lived between 420 and 0 nc, and we she fifth of the ten Attu orators He was a pupil of 180 crates, and wrote judicial or strong for other people and founted a school of rhetoric at Athens in which Demosth nes is supposed to have been his pupil Fleven posed to next often me pupil ricen only of h spe chea are extant. They throw an important light on Attic law see Sir R (John Attic Oratory from Antiphon to Issues, 1903 Sir I Wyse, Speeches of Issues, 1903

Isaiah, son of Amor was the greatest and most important of the early Jewish prophets. He was of high social rank, and an inhab of Jerusalem. We learn from ch var 3 that he was married and the father of a family. The heading of the book which be use his name (i.1) tells with the average of the solution the book want to the his hand of 17 octa-us that he prophested from the vear of king Uzzlah e death (710 BC) through the reigns of Joth un Abaz, and Hezz klah, and a late tradition (cf. Heb. xl. 37) tells us that in the days of Manissch he suffored death by being sawn asunder but no mention of such a fate 19 to be found in the Book of kings The account of the vision by which the prophet was called to his work is given in chis The book which bears his name has during the last century been the subject of much discussion Aben 1/13 was the first to call attention to the fact that the book was capable of sub div and later critics have critical on the work of sub div most vigorously. The chief break comes after the xxxix Chapters xl to lxvi contain many p is sages that seem conclusively to prove them sages that stell contents by to prove them to be post extile. The people are addressed as these who have already suffered the punishment of their sins and who here we will already free in the discourse on eriung the highleousness of valued with begins it child to yours. who reigned more than a century after the death of I is adduced a a sign that Yahweh will fulfil his promises in the near future This litter section is itself gener ally divided into two parts viz xi ly and ly lixy known to perfively as Deutero Isaah and litto Isaah of which tho second is the earlier in date. The ques-tion of the subdive of the earlier part of the work is more difficult and complicated H ic igain certain portions such as xill -NIV WIN NIV ON the first that they presup po the conditions of lifer times. It would be impossible here to speak of the mer claborate sub divs such a those of the vine (Inc.) but her et) but most scholas ac agreed in making a fourfold div of the prophecies actually attributed to f These divs correspond to four in-Lighth Lileset, prophesical in the nation to the beginning of x and possibly also in certain later parts. The accordant that of certain later parts Shalm inexer and Sennacherib ch xxviii, contains the first promises of the coming whom liter ages have identified he Messiah – there is much doubt with the Messiah There is much doubt as to the extent of the third invasion, that of Surgon whether or no it included Julih Driver, Robertson Smith, and others hold that it did not and assign to other from that it the not control was the jerned xx vx 10; (by nc, Sayco, and those hold the opjosite view, and give the x -41 and xxii Po the last inva ion, that of semacherib, belong most of the chipter's from XX-XXX See

G. H. A. von I. w.ld. Prophets of the Old
Iestament S. I. Drivet, I-wanh, 1888,

G. A. Smith commentary in The Expositor's Bible, G. W. Wale, The book of the
Proph t. I-sauch (Westminster Commentaries), 1911, and works by (1. A.
Dillmann, F. Delitzsch, T. K. Cheyne, etc. Isala, see IJSHEL.

isandwana, or isandula, isolated kopie in Zululand, 60 m. W.S.W. of Ulundi, S. Africa. Here, during the Zulu War, Col. Durnford's column was surprised, on Jan. 22, 1879, by 20,000 Zulus under Cetewayo. and annihilated, Col. Durnford and Pulleine being killed.

Isar, riv. of Bavaria, rising in the Tyrolese Alps and flowing N. and N.E., passing Munich. It enters the Danube opposite Degendorf. Length 180 m.

Isaure, Clemence, see CLEMENCE IS MIRE.
Isauria, anct. dist in Asia Minor,
bounded by Pisidia, Lycaonia, and
Cilleia. In Rom. times, the inhab, were a barbarous race and daring sea-robbers. They were overcome by P. Servilius in 78 B.C., but soon rebelled and were a constant source of trouble. The rebel Trebel-lianus, in the third century A.D. assumed the title of emperor, but was overpowered and executed. The Isaari are said to have been effectually subjugated in the reign of Justinian in the sixth century. 1. has Justinan in the sixth century. It may had the honour of producing two emperors, Zeno (A.D. 474–491) and Leo III. (718–741). See W. M. Ramsay, Historical Geography of Asia Minor, 1904.

Ischalis, see Irval 1998.

Ischia (anct. . Enara), very fertile and picturesque is. In the Bay of Naples, Italy. In the centre is an extinct volcano, from In the centre is an extinct voicing, com-which the surface gradually slopes all around towards the sea. Corn, fruit, and wine are grown; straw plaiting and fishing are carried on. The is, was disturbed by curthquake shock in 171 n.C., 92 n.C., A.D. 1302 and 1883. The chief the, are I., the eap, and Casamicciola, visited for its hot springs. I. was sacked by the pirate Bar-barosa in 1541 and captured by the duke of Guise in 1547. It was occupied by Nelson at one time, and Murat took refugo here in 1815. It was originally colonised by the Gks., who called it Pithecusa. Pop. (is.) 29,500; (in.) 9200. See A. Rittmann, Geologie der Insel Icchia, 1930.

Isohl, or Bad Isohl, magnificently situated inland watering-place of Upper Austria, 30 m. E.S.E. of Salzburg. Chiefly known for its medicinal baths and as the summer residence of the former Austrian imperial family. An important industry here in salt. Pop. 10,300.

Iseo. Lago d', picturesque lake of Italy, 15 m. long and about 2½ m. broad, at the foot of the Alps, between Bergano and Mercial M. Alps, between Bergano and Mercial M. Alps, between Bergano and

Brescia. It is traversed by the R. Oglio. Iseran, pass in the Alps (9085 ft.), con-necting the valleys of the Arc and the Isero. The neighbouring peak, Mt. Grand Paradis. was for years confused with Mt. Iscran, owing to the fact that the Montagnards cell not a peak but a series of pas-tures a mont and that the pastures here were called Mt. Iseran.

Isère: (1) dept. in the S.E. of France. between the Rhone and Savoy, formed out of the anet. prov. of Dauphine. The S.

Rhone surrounds it on every side but the S., while its trib., the I., flows through it.
The dept. is divided into three arrons.,
Grenoble, La Tour de Pin, and Vienne. The cap. is Grenoble. Silver, lead, coal, and iron are mined; slate, stone, and marble quarried; and gloves, silk, paper, and cement manufactured. Green Chartreuse was manufactured in the monastery 14 m. N. of Grenoble. Area 3179 sq. m. Pop. 573,000. (2) Riv. rising in the Alp., and, winding W. and S.W. for 180 m. (100 m. of which are navigable) through the depts. of Savole, I., and Drôme, joins the Rhone a few m. above Valence. Valence.

Iseriohn, tn. of Westphalia, Prussia, 36 m. by rail S.E. of Dortmund. It has manufs. of cuttery, bronze, and other metal articles, furniture, and chems. Pop.

31,000.

Isernia (Æsernia), tn. in the prov. of Campobasso, Italy, situated in the Apennines, 50 m. N.E. of Naples. It is notable for its Rom, antiquities in and near the tn., and especially for a long subterranean th., and especially for a long subterranean aquaduct, which still supplies the industries and fountains of I, with water. There is, too, an anet. Rom. bridge outside the th. Nearby is a chapel to SS. Cosmas and Damian.

1. Is identical with the anet. Samnite th. Esernia, which was consequently added to SS. quered and colonised by the Roms, c. 260 B.c., and the massive polygonal walls which form the basis of the existing walls in nearly their entire circuit are attributed overthrew the cathredral besides doing other damage. In 1799 the tn. was stormed by the Fr. and in 1860 it was sacked in a Bourbonist revolt. I. is the sent of a bishoppic. It has manufs of woollens, pottery, and tiles. In the Second World War some damage was sustained by the churches of S. Maria della Benedettine and S. Maria della Monache, but the Rom, bridges were, for the most part, spared and the tn. suffered companatively little. The Gers., however, stole the entire coin collector. Pop. 15,000.

Islahan, see Ispanan.

Islahan, see ISPAHAN,
Isherwood, Christopher, Eng. novelist,
b, at Disley, Cheshre, 1904. His father,
who was killed at Ypres in 1915, was an
Army officer and L's early years were
spent in various garrison this. He was
educated at Repton School and Corpus
Chusti College, Cambridge. After temporary employment as a private secretary and tutor, he went in 1929 to Berlin
where he stayed until Hitler came to
power in 1933. From schooldays he had power in 1933. From schooldays he had formed a close friendship with W. H. Anden (q.r.) with whom he collaborated in three plays notable for their expressionin three plays notanic for once expressions is technique—The Dog banath the Skin (1935), Ascent of F.6 (1937), and On the Frontier (1938). In 1938 he went with Auden to Chiua for the purpose of writing a book about conditions there. The reof the anct. prov. of Dauphine. The s. is look about conditions there. The reportion is very mountainous, the highest sult of this further collaboration was point being the Aiguille du Midi (13,075) Journey to a H ar (1939). His first novel, t.), which rises on the S.E. frontier. The M. and W. of the dept. is formed of platfolium broken by hills and valleys. The R. inext novel Mr. Norris Changes Trains

(1935) showed a considerable advance and leads and Vindals See C Drialowski, estab his reputation as a writer with a leader and lidefons als Literarhistorider, capacity for realistic and humonous pet ceptions and a clear prosessible. In Jan Philosophie in three geschichtlichen Entceptions and a clear prosestyle. In lan 1949 he went to the U - A with the inten-tion of becoming a permanent resident His interest in met sphysical studies allied him with the Veducta Society in Los Angeles, and he his collaborated in a trans of the physical Gita. Living in California he has also worked as a script writer for film. His autobio graphical work, I tons and Shading, was pub in 1)25

Ishni, Kikuðiro, Viscount (1866-1945), Jap d Jomatist b at Chibi Studied Isw at Jokyo Was in the consultr ser vice and atterwirds he becimo Vice minister of foreign iff ilrs 1905 Amb is to France, 1912 till made nunster of foreign affairs, 1915-16 Viscount and member affairs, 1915-16 Viscount and member of House of Icers, 1916 Ambus to USA, 1917-19 and to Iranec from 1920 Acting president of Council of Ieague of Nations 1921 Delegate to Naval Disarmament Conference Geneva.

Naval Disatmament Conference Geneval. Killed, together with his wife at their home in Tokyo in an Auer bomber 1shim (1) In in the One k Residual State of the RSFSR, 120 m > 1 of Lobolsk on the Ishim R if his an ann fan held in Dece and the are tallow melting works spinning in tweiving mills Popabout 7000 (2) Riv of Siberra rising in Akmolinsk Kizakh > R and flowing through fertile dists 1 it distance of 3.0 m. It joins the lity h > 1 of Folials Kitst in the State of Siberra Risingles of the Siberra Risingles Ri

Ishmael, son of the dram by Hagar the Payptian handmaden of his wif Sarah On account of Such a palot v Lat the on account of with a plant of the transport inform we with he mother expelled from his tither at buse and driven into the wilderne when a guard an wight preserved their lives and directed them to water (Gen xx 1) 21). The box grew up into a famous it has married an Fgyptian woman and became the an cestor of a great nation. Mohammed claimed decemb from 1 and Moderns thing the control of the mother in the Karba at Mecca (f (acnesis x) 12 Ishpeming, city of Mirquette, co, Mi high to A Has largeiren mines (add in marble in the found in the neighbourhood Pop 9400)

Ishwar Chandra, 60 15WAR
Ishwar Chandra, 60 15WAR
Ishdore of Seville, 1 Isidorus His
palensis (0 60 6 6) Birlip of Seville and
proceeding Heward durated in a Spency opedist. How is educated in a mone to and became distinguished in his control race with the Arrins In 199 he control (16) with the Arms In 1971 and became famo (1 tr his powers of immistration and h) I aming in selence, h) t, and theo logy. He was present at the councils of Toledo (10) and sevent (611) and it was his influence that altered the organisation of the church in Spain He wrote an encycl pudia from his own knowledge It included law, science, hist, and theology and helped to keep plive some knowledge of learning through the Dark Ages Among his works are Originum seu etymologiarum libri, and a hist of the

undlung II Isid rus con Sentia, 1914
Isidorian Decretals, or False Decretals,

spurious amplification of the canonical cellection in use in the Church of Spain in the c₁ lith century. The author assumed the name of Vereator taking in addition the name of Vereator the collection is divided into thice parts. The first contains a vents letters (forged) attributed to various popes. The second contains a collection of councils and the forged Donation of Constanting. The third a Donation of Constantine | The third a series of decretals from the Nician counell The object of the forger was to re-form the cason law and to increase the inthority of bishops as against civil rulers. They were very skilfully composed, and were the conse of violent controvers.

Isingless, venety of gelatin obtained from the drud swimming bladders of different tishes. It is used principally for culmary purposes and for clarifying beer and wine and all of for making coment and plaster it is manufactured chiefly in Russia of making coment and plaster of the Russia of the Russi

Isis, enct I gyptian derty the goddess of fe cundity, identified in (ik mythology with Ceres She was the wife of Osnis and the mother of Horus and duighter of Nut or the Sky Her story is encorgrett beauty and trucdy and is briefly is fellows. Osnis king of I full, was the victim of remspiries led by his brother set the god of evil O niswa entroped in a crest which wa carried aw iv and finally the wn up on the sca shere I, after long long incurred over it and hilms it went to urge Him to avenge his to avenge his Meanwhile Set, father

nmr upon the chest, ut the body of Ouris



into fourteen pieces and had them dispersed over the land. I then two breelf up to travelling from the to place building a temple over each trum at of her husbands body as sho tendit. Osurs became lord of the other well ind appeared to his son Horus and truckt him the use of arms. Horus defeated set and took him prisoner but, bein emaged because his mother gave set is freedom be ent of her head. Thoth replied it in the form of the head of a 607 The outstretched wings of I frequently found in kgyptlan decoration; she is often represented with the face of a woman and the hours of a cow, sometimes with the lotus on her head, and at other times hooded - the latter representing incidents in her career isis, name applied by Oxonians to

the upper part of the R. Thames, England. This name was used as early as 1607, for Camden montions it. The popular belief that the name Thames is derived from the composition of Thame and Isis is incorrect.

Iskander Beg, see SCANDERBEG. Iskanderun, another name for ALEX-

ANDRETTA (q.v.).

Iskelib, tn. of Asiatic Turkoy, situated in the vilayet of Ankara, 100 m. N.K. of Ankara. Has an old castle, and there are salt-springs S. of the tn. Pop. about 15,000.

Isla de Pasqua, see EASTER ISLAND. Isla y Roja, José Francisco de (1703-81), Sp. satirist, Jesuit priest and a famou-preacher, h. at Villa Vidance, Leon. Lampooned the ignorance of the Sp. priesthood in a novel entitled Historia del famoso predicador Fray Gerundio de Campuzas. The book was prehibited (1760) in consequence of the storm of protests raised by the victims, but he pub. a second part in 1770 unknown to his a second pitch in 170 unknown to have superiors. He also completed, shortly before his death, the trans, of Gil Blas into Sp. In 1830 his Obras Escopidas came out as vol. xv. of the Biblioteca de Autores Españoles. With the other Jesuits he was hard from Spain in Autores Españoles. With the other Jesuits he was bed from Spain in 1767, and went to Bologna, where he lived until his death. See B. Gaudeau. Les Precheurs burlesques en Espagne au

XVIII' Siècle, 1891.

Islam (Arab Islam = 'surrender to God'), virtually the Mohammedan faith (see MOHAMMEDANISM). The term is used in a broader sense to refer to the general features—philosophical, religious, artistic and social—of Mohammedan culture. e.g. and social—of Mohammedan culture, e.g. in Nietzsche's Antichrist, Renan's lecture Islamism and Science (pub. Eng. trans., 1896), etc. 'Moslem.' 'Muslim,' or 'Mussulman' (derived from Arabic salama, meaning 'to submit': ef. salaam), as a substantive, means a Mohammedan and, as an adjective,' of or pertaining to the Mohammedans; and all Mohammedan communities of the world of Islam are Muslim or Moslem communities. The salient feature of I, is the remarkable homogeneous unity of the Moslems, a unity which is founded on their faith and on the language in which the Koran was on the language in which the Koran was written. The essential world of I. embraces Egypt, the Auglo-Egyptian Sudan, Saudi Arabia, Iraq. Syria, Palestine, Transjordan, Aden, Libya, Algeria, Tunis, Morocco and Zanzibar- all Arab countries; and the non-trab countries, Persia, Afghanistau, India (which has 75 million Muslims) and Mulaysia. These countries do not exhaust all the existing Muslim pop.; they represent, however, most of the independent Muslim lands and the most important Muslim communities, that generally speaking, oreidental in-There are also numerous Muslim communities, that generally speaking, oreidental in-munities in various European countries, methods, customs, and theories have been e.g. there are estimated to be 25 million accepted for which there was no favouring Moslems in Soviet Itussia, in Yugoslavia historical and cultural background. Re-(1) million), in Albania (about 800,000); cognition of the superiority of W. science and, among non-European Muslim companies in duced many Arabs to countries, are large elements in Liberia break with belemic tradition. This back

modern Constitution, Turkey officially no longur regards herself as an Islamic state, Islamic teaching being forbidden in schools, while even instruction in Arabic is not tolerated. The religious orders in Turkey have been closed and religious exercises outside the mosques prohibited; though individual Turks are no doubt still loyal to the teachings of Mohammed and the mosques in fact still attract large congregations. Probably so attract large congregations. Probably so remarkable a unity as characterises the Moslem faith would never have been achieved if the influence of I. had been restricted to the religious aspects of Musthe life. But unlike Christianity and other monotheistic faiths, I. supplies a political and social standard as well as a religious code. It provides standards for legal, social, and political conduct, and regulates the life of a Moslem throughout the entire complex of his economic and perthe entire complex of ms economic and personal activities. Hence I, overrides the racial, national, or social distinctions in Muslim communities and in fact everything that savours of caste or class distinction is anotherna to true I. The tinction is anotherna to true I. The political consequences of this Muslim unity in the world's affairs, or, in other words, the existence of a homogeneous Muslim Empire began to lessen with the deeline of the Caliphate. The Ottoman Empire did indeed provide a temporary if artificial and materialistic basis of unity, but it was only after the beginning of the present century that the idea of Muslim unity began once more to exercise an inunity began once more to exercise an increasing influence upon international ahairs. Today the Muslim peoples of Exppt, Iraq, and Persia area political force in modern affairs. Though the world of I. has, to a considerable extent, felt the impact of W. ideas, it is still governed essentially by religion. The extreme ascetteism of the Wahabi kingdom of the Nachabi kingdom of the backet is an elegant way of this tarti-Sa'ud is an eloquent proof of this truth. Nothing, too, has been a stronger bulwark against Nazi influence in the Muslim wold than the faith of I. Ever in Persia, where, during the late Shows reign, religious practices were not eccouraged, the Constitution of 1925 maintained a lunited religious-Islamic character and with the abdication of shal. Reza Pahlevi in 1911 religious restrictions were relaxed. Many of the Muslim peoples dispersed throughout the world have become assimihated to the political and cultural me of their country of adoption. This is especially true of the Arab immigrants in America; but, as indicated above, there remain more than a dozen Muslim, or partly Muslim, countries whose chief inspiration comes from I. and Islamic traditions. But it cannot be denical that generally speaking, occidental indicated has been dangerous for I. W. lated to the political and cultural life of their country of adoption. This is especand, among non-kuropean Muslim com-and munities, are large elements in Liberia, China (over 20 million), and Madagascar (700,000), etc. Turkey is not included, the Near Eastern countries; but the re-for, by the Law of April 10, 1928, of the laxing of hereditary ties with I. in such

advanced countries as Egypt and Syria into two classes, continental and oceanic, has also been ascribed to the antagonism | The former are the result of the submerof Arab youth to the narrow-mindedness of the ulcma (doctors of sacred law), whose interpretation of 1. was retrogressive and opposed to all scientific advance. Yet this estrangement from I. is often only slight and many of the most advanced Arab thinkers of today realise that, without I., the future offers only poor prospects to those peoples whose spirit and intel-lectual life depend fundamentally on the Muslim faith. In the last two decades political nationalism has been the domi-nant factor in the political life of the specifically Arab countries. But even this nationalism has been and still is coloured by I., and indeed Arab nationalism, the ultimate objective of which is pan-Arabism (q.r.), could never be divorced entirely from I. Pan-Islamism, however, nomains a mero dream, as remote from probability as a phad waged in all the Islamic countries of the Near and Middle E. Prominent Islamic writers and thinkers, like the Persian Multahid, Sheikh Al-Zinjani, Dr. Taha Hussein, onetime Dean of the Faculty of Letters in Cairo Univ., and Dr. Yahva ad-Dardiri all tend to see in a return to the Koran the chief remedy for Araballs and their 'moral

attend to see in a return to the Koran the chief remedy for Arabills and their' moral anarchy.'

See T. Carlyle, Heroes and Hero Worship, 1841; D. S. Margoliouth, Mahomet, 1905; L. Stoddard, The New World of Islam, 1921; S. H. Longrigg, Four Centuries of Modern Iraq, 1925; M. T. Titus, Indian Islam, 1930; and Khalidah Adib, Inside India, 1937; Eugène Jung, L'Islam et les Musulmans dans l'Afrique du Nord, 1930; T. Arnold, The Legary of Islam, 1931; H. A. R. Gibb (ed.) II hither Islam, 1931; H. A. R. Gibb (ed.) II hither Islam, 1931; C. C. Mains, Islam and Modernism in Egypt, 1933; Sir H. Mac-Michael, The Anglo-Egyptian Sudan, 1934; H. St. J. Philby, Arabia of the Wahabas, 1935; T. E. Lawrence, Seven Pillars of Wisdom, 1931; Freya Stark, The Southern Gates of Arabia, 1936; Sir R. Storrs, Orientations, 1937; R. Landau, Search for Tomorrow, 1938; G. Antonius, The Arab Arabening, 1939; A. J. Arberry and Rom Landau (eds.) Islam Today, 1943; H. St. J. Philby, A Pilgrim in Arabia, 1943 day, 1913; H. St. J. Philby, A Pelgrim in Arabia, 1913.

Islamabad, tn. in Kashmir, India, on the R. Jhelum, the original cap, of Kashmir, but now of secondary importance. It possesses an old summer palace, a beautiful mosque, and a shine. Close to it are the sulphur springs of Anant Nug, falling into a reservoir full of sacred fish. Chintz, cotton, and woollen goods are

manufactured, and the famous Kashmir shavis. Fop. 10,000.

Island (Old Eng. ieg. isle, and land), piece of land surrounded by water, but exclusive of continents (see Continent). Greenland, (less than one-fourth the size of Australia). Creeniand, tiess than one-fourth the size of Australau, is presibly an ice-bound archi-pelago. New (unnea, with an area of 303,000 sq. m., Borneo (284,000 sq. m.), Madagascar (227,000 sq. m.), and Sumatra (162,000 sq. m.) are the next largest is.; Great Britain comes sixth on the list, with 303,000 sq. m., Borneo (224,000 sq. m.), and Sumatra (162,000 sq. m.) are the next largest is.; separated from Jura by the sound of I. Great Britain comes sixth on the list, with Arca 150,100 sq. m. The lochs an area of 83,700 sq. m. Is. may be divided of Grulnart and Indal penotrate so deeply

gence of a coastal range, or may have been formed by the sea cutting through the neck of a peninsula, or the cuting back of an inlet until a piece of land is cut off. In all cases, except Madagascar, these Is. are connected with the mainland by a con-tinental shelf, and their flora and fauna are similar to those of the adjacent centinent; similar to those of the adjacent combinets; for example, the is, of the W. coast of Scotland bear this relation to Great Britain, which itself bears the same relation to the continent of Europe. They may be classed according to their structure of their beat of the beat of the continent of Europe. ture, if they be solitary, as Iceland; in chains, like Japan; or in archipelagoes, as in the Ergan. New Zealand, in structure is usually associated with areas of continental dimensions, and, for that reason, it is often regarded as an 1, of the continental type. It is, indeed, a minia-ture continent and too isolated to be spoken of as adjacent to Australia or to any other continental mass. Oceanic is, rise abruptly from great depths, and show no geological continuity with the main-land. They are due to various causes, and may be either 'volcame,' due to the gradual rising above the waves of submerged mountain peaks, or to a violent volcame upheaval of the ocean-bed; or coral is., due to the gradual agglomera-tion by the action of the water, or the active building of the corals themselves, or the skeletons of marine organisms (see Coral). Numerous submarine is. have been discovered which only require volcanic action or the deposition of sediment to rise above the surface of the ocean. See also GEOGRAPHICAL DISTRIBU-TION

Islands, Bay of, bay on the W. coast of Newfoundland, in the Gulf of St. Lawrence, forming an estuary at the mouth of the Humber R. It is famous for its beautiful scenery, and is within easy reach

of good tishing and hunting.

Island Scots, body of Highlanders, descendants of Somerled, there of Argyll and lord of the Isles, who settled in Ireland, establishing themselves in the mis, of Uster, plundering the surrounding country. The earl of Sussex made an country. The earl of Sussex made an attempt to subdue these Macdonalds (MacDonnells), but failed. They were finally defeated by their former ally, Shaue O'Neill, who took their leader, Sorley Boy MacDonnell, prisoner. The Eng restored the MacDonnells, and Shane O'Neill was slam by one of the High-landers in a brawl (1567).

Islandshire, part of Northunberland, England. It was at one time part of the co. of Durham; it includes the Farno Is. and some distancer Berwick-on-Tweed.
Islas de Barlovento. see Windward

ISLANDS.

Isla de Pinas, see Islk OF PINES. Islas de Sotavento, sec LERWARD

that the portion is almost separated and known as the Rhinns of Islay. The high-est summit is Ben Bheigeir (1609 ft.). The high-Fishing is very good in the streams and lakes; dairy-farming and whisky dis-tilling are the chief industries. The chief tn. is Bowmore. I. was once the chief seat of the 'Lords of the Isles,' but the Campbells finally gamed the is. (1616). Pop. 6500.

Íslebius, Magister. AGRICOLA, 260

JOHANN

Isle Adam, L', tn. of the dept. of Scine Oise, France. The sixteenth century et Oise, France. The sixteenth century church of St. Martin suffered considerable damage in the Second World War. 1200.

Isle de Bourbon, see Reunion.

Isle de Richelieu, see JAN MAYEN

ISLAND.

Islayd.
Isleham, vil. of Cambridgeshire, Eugland, 10 m. S.E. of Elv. Chippenham Fen, 3 m. S.E. of the railway station, is a natural reserve of Fenland of particular interest because of the insect, plant, and bird life which it contains.

Isle Jourdain, in. in the dept. of Gers. France, on the Save, 18 m. W. of Toulouse. It has great horse and cattle fairs and considerable trade 1. one, produce and wine. It is an old in., and contains an anct. church with a tower dating from the tenth

Pop. 1100. century.

Isle of Dogs, see Dogs.

Isle of Ely, name given to the N. portion of Cambridge-hire, on account of its having been at one time isolated by marshes, being included in the region of the Fens; it has been drained and is now fertile land. Famous as the scene of the final stand of Hereward the Wake. It returns one member to Parliament.

lisic of France, see MAURITICS, Isle of Man, see MAY, ISLE OF, Isle of Pines, (1) 1. of S.W. Cuba, So m. of Batabano, with an area of 1180 sq. m.; it has some minerals and quarries; but the islanders are chiefly engaged in rearing enttle, and cultivating grape fruit and winter vegetables. Pop. 10,000. (2) Also an is. dependency of New Calcdonia, 30 m. to the S.E. with an area of 58 sq. m. and a pop. of about 600.

Isle of Thanet, see THANKE, ISLE OF.

Isle of Wight, see Wight, Isle or. Isles, Lord of the, Scottish title claimed by the descendants of Somerled (d. 1161), thane of Argyll. Somerled was a des-cendant of Colla-Uais of Ireland. He sucoccided in driving the Norsemen from Argyll and the W. Isles, establishing himself as an independent prince; his lands included Kintyre and the Isle of Man. His descendants maintained themselves in the same manner. In 1111 the Donald in the same manner. In 1111 the Donald of the Isles, who had become very powerful by his fleet and large army, claimed the earldon of Ross through his wife, including the Isle of Skye. The earl of Mar, with an army of Lowlanders, marched against him, and Donald was defeated with great loss at the battle of Harlaw in Abordeen. The earldom then reverted in Abordeon. The earldom then reverted to the crown (1121), but was restored by

and thus eleventh earl of Ross. John Macdonald, fourth lord, committed treason, and was deprived of his carldon (1469). In 1502 Ponald Dhu, grand-on of John, was proclaimed king of the Isles, and led a revolt against Jumes IV. Ho was defeated and fied to Ireland. Since 1469 the title of 'Lord of the Isles,' has belonged to the Prince of Wales. The title 'Lady of the Isles' is sometimes applied to the wife of Rapan Nucleus ideas. plied to the wife of Baron Macdonald, descendant of a half-brother of John of the Isles. It is, however, a matter of keen controversy. The house of Somerled surcontroversy. The house of Somerled survives in two branches, that of Baron Mac-

douald of the Isles and the Macdonnells, earls of Antrim in Ireland.

Isles of the Blest, or Fortunate Isles, in thical group of is, on the edge of the W. Ocean, peopled by the blessed mortals who were 'never to die.' Sev. nations seem to have believed in this myth, Tradition places the Amenet (pleasant place of the dead) of the early Egyptians somewhere in the W. Ocean; the Babylonians be-lieved in an i-le of the blessed encreted by four rivs. The Gk. belief expressed by Homer appears to connect them with the Elvain Fields. Plato describes in his Enmons how solon was told by Egyptian priests of a country larger than Asia Minor, which was overwhelmed by the sea. This was known as 'Atlantis,' and the surviving is, were termed the Fortunate Isles. A very early tradition suggests than an unrecorded voyage to the Canary Isles and Maderia may have gained these places this mythical name. The Celtic Avalon of King Arthu and St. Brendan's Is, were represented as blest with summer all the year round, and 'therefore fortunate.' There are also legends of Lyonesse off

to any all and many others.

Isle-sur-la-Sorgue L', tn. in the Vauchus dept. of France, 12 m. E. of Avignon, pattic-quely situated on the Sorgue, a trib of the Rhone. The inhabs, are cheffy engaged in the textile industry.

Pop. 6500.

Isleworth, tn. and dist. in Middlesex. England. Situated in the fertie valley of the Thames, it is full of flourishing mrkt, gardens and nurseries. It also contains Soon House, a former seat of the duke of Northumberland. The only manuf. of importance is soap. Forms with Heston

a bor, constituency, pop. 47,000.

Islington, Sir John Poynder Dickson-Poynder, first Baron (1866–1936), Eng.
politician and administrator, son of Regressions. din. J. B. D.-P. Succeeded his uncle, 1881, as sixth baronet of an old Wiltshire family of Hartham Park, Corsham. at as Unionist member for the Chippen-hum div. of Wiltshre, 1892–1910, but took an independent line as a strong freetrader. In 1910 ho was appointed governor of New Zealand. Chairman of the Indian Public Service Commission, 1912-14. Chairman, National Savings Committee, 1920-26.

Islington, metropolitan bor, of the co. of London, England. It includes Holloway, Highbury, Kingsland, Barnabury, and Canonbury, all retaining the names of anct. James 1. to the heiross, mother of Alex- Canonbury, all retaining the names of anet. ander Macdonald, third lord of the Isles manors, the latter belonging as early as

the thirteenth century to the priory of St Bartholomew, smithfield the name still given to the great metropolitan cattle nrkt The two prisons of Pentonville (1842) and Holloway (1850) are included in the dist also the Agia Hall (1862) other building are the Great N (entral Hospital, the N Polytechnic the London Lever Hospital and the London School of Divinity St John's Hall Highbury bor is divided into three part divises a returning on member. Pop 220 100 Islip, tu of U.S.A. Suffolk co. No. ouc h

York on I ong Island and Great Bay a favourte summer resort South It is 11 m | of Brooklyn and the quarter of sev porting clubs he id Has Pip fishing and fruit canning industries

3 400 Ismail, or Ismaila (1) In and dist of Bossarabia in the Wildavin 55 R on the N aim of the D miles 120 m.5 W of Odes 3. The tn is the seit of an active Odes 3. The fit is the sett of an active export trade, beling estectibly noted for its fruit. It was at one time. Furkish for trees but was taken by the Russian general survivor in 1790 and finally ceded to Russian 1878. It became Rumanian in 1918 and Russian in 1340. Taken by the Gers in 1341 in the course of these any sugn of Russia and relaten of their invision of Russia and ictaken by the hussians in 1111 Pop 42 the three investors of the street and traken by the Russians in 1141 Pop (th) 26 600 (dist) 221 200 (2) In of Egypt on the Suer Cvanl and connected by rail with Suer and Cuto Has fine public squares and guidens. Lop 16,000 Vernette.

Ismailis Mohammed in sect who be longed to the Shutes They therefore believed that the im im ite was vested in the descendants of Mohammed alone and so of Ali, the prophets son in law and chosen minister Their name was derived from Ismailibn Jafa, whom they deemed the seventh and last of the Imams The sect would long up have had out had not a certain Abdallah ibn Maimun arisen (c a D 870) a Persion scentic und juggler who traded on the I mailtes Messante belief in a Hidden Imam or Mahdi The converts of Abdallah learnt to despise all positive religious and outward obser vances, and to regard the doctrines of resurrection and hell etc. 14 more mythe or allegories. In 891 1 Babylonian pea sant Hand in Karmat, alled himself with the Isma ilis and founded the brotherhood of the karmathians who were the cause of ceaseless bloodshed and r bellions during the two conturies following. The of cease(cap bloodshed and r belinons during the two conturies following. The Fatimite dynasty of Califa and Mahdasprang from Obendallale (a and Master of the Lora lilts. This man was descended from Al Lallah, and claimed to be a selon. from the stock of katima the prophet s daughter

Ismail Pasha (1830-95) khedive of Egypt will be chiefly remembered in hist as the man who by his senseless expendi tures of cord an easy avenue to European intervention in Pryptian affors yet he discovered to his backward people the discovered to his backward people the worth of a good education and of many worth of a good education and of many of the industrial interprises.

Wideas In 1863 he became viceroy, having successfully crushed a formidable revolt in the Sudan In 1867 he per suaded the Turkish sultan to recognise burial to Polynices.

him as khedive and four years later behim as khedive and four years later became viituilly independent. During his reign he eriched many an unscripulous mancier for he built palices and theaties founded a sugar industry, regimed the customs etc. all with foreign credit. By 18.4 the year of the annextion of Darfur he hid piled up a nitional debt of over \$100.000.000 and when he sold his Sucz Canal shares to en at Britain (1875) he practically in sit dler the come to his financial rescue. The final result of foreign interference wis the addictation of 1 in 18.9 in fivour of his original state. the at dication of 1 in 18 9 in fix our of his son lewik The remainder of his life was prolinestic See Colities Ismael the rained Kledice 1933 G. Douin Hat rainerym dudiodice Ismael 1934



AHEA I HAWEL

Ismay, Lionel Hastings, first Baron (b 188) Brit soldier commissioned in 1907 He served on the Indian frontier and in the I ust World War in Som illiand, where he was twice mentioned in despatches He was it the Staff College Quetta, 1922, in lat the Army Headquarters India in Willingdon Viceroy of India, 1931-33, and ceretary to the Committee of Imperial Define 1938. He was deputy secretary to the War Chinet from 1949 and chief of Stall to the Minister of Define 1949. fenc from 1940

Ismay, Thomas Henry (1837-99), Eng Ismay, Thomas Henry (1007-201), Mag-shil (wher b in Cumberland He started a shipbuilding business of his own at 11011 oil, after serving a short term of apprenticeship and engaged particularly in th Australian trade. In 1867 he en tered into partnership with Wm Imrie, and formed the Oceania Steamship Company Later he became chairman of the pany Later he became chairman of the White Star I inc, and a ducctor of many

ismet Pasha, see INONC.
Ismid, or Isnikmid (anct. Nicomedia),
tn. in Asiatic Turkey, situated at the head of the gulf of the same name. It is connected by rail with Huidar Pasha, Angora, Konia, and Smyrna, and contains a fine sixteenth century mosque. It is the seat of a Ck. metropolitan, and an Armenian archbishop, and was formerly the anct. seat of the kings of Bithynia, but it now retains little of its former dignity. Its port, Darijeh, is about 31 m. distant, and here the Anatolian Railway Company have built docks and a quay. Pop. about18,100.

Isnik, see NICAA. Isobar, line drawn on a chart joining places of equal atmospheric pressure. The chart may represent the earth's surface or a surface at a constant height above the

carth.

Isochronism, that property possessed by an oscillating system, e.g. a pendulum, which oscillates in equal times, however great the vibrations may be. This can great the vibrations may be. This can only be possessed when it moves in a cycloidal are. Because of their practical I., musical instruments such as tuning forks, organ pipes, and stretched strings give notes whose pitch is independent of

the intensity. As Sound: Reasticity. Isodinal Strata, those which dip in the same direction on both sides of the axis of curvature. They were doubtless pre-ceded by ordinary symmetrical folding, after which the vertical axis became tilted and gave a sigmoidal fold; in many cases continued strain has caused the middle limb to be clongated and fractured.

Isoclinic, and Isogonic. When a magnet is suspended treely from its centre of gravity, and allowed to come to rest, it is found that it takes up a definite position at a given locality. The vertical plane passing through the axis of the magnetic scalled the magnetic meridian. The angle, between the plane of the geographical meridian and the magnetic meridian is called the declination. This varies at different points on the earth's surface. Isoplaces on the earth's surface at which the declination is the same. The angle made by the axis of the freely suspended magnet with the horizontal is called the inclustion or dip. At the two magnetic poles the dip is 90°; at the magnetic equator its value is zero. It has intermediate values at places between the poles and the equator. Isoclinic lines are lines con-necting those places on the earth's surface at which the inclination is the same.

Isocrates (436-338 B.c.), colebrated Attic orator, b. at Athens, where he was taught in the schools of Gorgias, Prodicus, and Socrates. He was prevented by his timidity from ever speaking in public, but wrote orations for others. He started a school of rhetoric at Chlos, but subse-quently moved to Athens, where he had He started a 100 pupils. He was a personal friend of Philip of Macedon, and this friendship for a time kept off war. When the Athenians were defeated at Churonea in 338, I. was so overcome with grief that he put an end to his life. Twenty-one of his orations and

eds. of his extant writings are by Baiter and Sauppe, 1856; Benseler and Blass, 1878 and 1913-27; and Mathieu-Bre-mond, 1928 ff. See Sir R. C. Jebb, Attic Craters, 1893; G. Schmitz-Kahlmann, Dus Beispiel der Geschichte im politischen Denken des Isokrates, 1939. Isocyanides, Isonitriles, Carbamines, or

Carbylamines, class of carbon compounds, isomeric with the cyanides, but containing the group -NC, in which the alkyl group is united to carbon through a nitrogen atom. They are extremely poisonous, have a dis-gusting odour, and on hydrolysis with a mineral acid yield forme acid and an amine. They cannot be hydrolysed by alkalis, and are of interest as possessing a bivalent carbon atom, the normal valency of carbon being 4. [. are made by heating a primary amine (e.g. aniline) with chloro-form and alcoholic potach. See NITRIDES. Isodimorphous Substances. Two sub-

tances are said to be isodimorphous when they each crystallise in two distinct forms (i.e. are dimorphous) and in each of their dimorphous forms are isomorphous. example, arsenic and antimony trioxides each crystallise in two distinct forms which occur naturally in minerals, but each form of the arsenic compound is isomorphous with the corresponding form of the anti-mony compound. Thus, As₂O₃ in arseno-lit (cubic), in claudetate (orthorhombic); St. O, in senamontite (cubic), in valentimite (orthorhombic), A. and S. are isomorphous, so also are C. and V. Again, calcium carbonite is dimorphous, crystalising as calcite and aragonite. Lead carbonate (it the mineral cerussite) is isomorphous with aragonite, but no form is known which is similar to calcite. Clistals of calcite often contain, however, carbonate of lead (plumbocalcite), which shows that this latter may also crystallise in the same form as calcite, although as yet it has not been discovered as a distinct mineral. Calcium and lead carbonates may therefore be said to be isodimorphous.

Isoetes, single genus contained in the order Isoetacere, which flouristes in temperate and tropical lands and consists of nity aquatic or semi-aquatic plants. Sev. of the species are known as quillworts on account of their grass-like; openrance, and I. lacustres is known in Britain as Merlin's grass. The genus resembles Selaginalla in its characteristics.

Isola, tn. in the Free Ter. of Trieste, 9 m. S.W. of Trieste on the S.K. shore of the gulf. It is noted for the famous I.

the gulf. It is noted for the famous 1, whice. Pop, about 10,000.

Isola Bella and Isola Madre, two celebrated is, of the Borromean 1s., Lake Maggiore, N. Italy.

I. M. is the larger and has long terraces and an old palace.

Isola del Liri, com. of Italy, prov. of Caserta, situated on an is, formed by the R. Liri, and 5 m. s.W. of Sora. It has machinery works and nature and woollen

machinery works and paper and woollen mills.

Isolationiam, see United States of

AMERICA, History.

Isomerism, term introduced by Berzellus to denote the phenomenon of the existence of two or more different subnine letters have come down to us. The stances whose molecules consist of the

same number of the same atoms. there are two compounds, viz. ctyl al-cohol and dimethylother, which both have molecules consisting of 2 carbon atoms, 6 hydrogen atoms and 1 oxygen atom. The existence of isomers is explained by the different ways in which the atoms are arranged in the molecules. Thus ethyl alcohol is CH₃-CH₃-CH₃, The first case objective is CH₃-CH₃. served was that of ammonium cyanate and urea (Wohler, 1828), both of which have the formula CON, H4; the former compound, however, is of the structure NH,-O-C≡N, while the structure of urea is $O = ((NH_2)_1$. Stereoisomerism is I. which cannot be explained on the usual plane formule, but necessitates consideration of all three dimensions of the molecule. It is frequently accompanied by optical activity, i.e. stereoisomers often exert a rotatory effect upon the plane of polarisation of polarised light. Dynamic isomerism or tautomerism is the name given to the reversible chemical transformation of one isomer into another. Dynumic isomers usually exist as an equilibrium mixture of the two isomeric forms; thus ordinary ethyl acetoacetate is a mixture of a compound

CH. CO CH. COOC, II, with the isomeric substance CH. · C(OH):CH · COOC. H.

Isomorphism (Gk. ίσος, equal; μορφη, rm). Two substances are said to be truly isomorphous when their crystalline forms and chemical compositions are similar. Mitscherlich discovered that the phosphates and arsenates of sodium crystallise in the same form, and from this and other observations he formulated, in 1821, his 'law of 1.,' which states that substances of similar chemical composition exhibit the same crystalline form. Since. however, a large number of similarly constituted substances are now known which crystallise in distinct forms, the statement crystalise in distinct forms, the statement requires modification. Among truly isomorphous substances may be mentioned the following: the alums, zinc sulphate, ZnSO, 7H,O; and magnesium sulphate, MgSO, 7H,O; ammonium chloride, NH,Cl (in which the group NH, behaves as a metallic radicle); and potassium chloride, KCl, etc. The converse of Mitscherlich's law by no means holds. Thus we find the diamond C: magnetite we find the diamond, ('; magnetite, Fe₀O₄; and the alums, which exhibit no chemical analogy, crystallising in octahedra. These substances are not truly isomorphous, but are said to be isogonous.
The power to form 'mixed crystals' or 'overgrowths' is generally accepted as a criterion of I. Thus, magnesium and zinc sulphates crystallise together in all proportions in the same form as a crystal of either constituent, and if a crystal of chrome alum be immersed in a solution of common alum, the new layer of the latter will be deposited regularly on the old crystal of the former. The law of I. is the most important generalisation in the science of crystallography, and has proved of much use in settling the atomic weights of sev. elements.

Isonitriles, see under NUTRILES.
Isonzo It. riv. which has its source at Monte Terglou in the Julian Alps and drains into the gulf of Trieste in the Adriatic. It is about 75 m. in length, is Adratic. It is about 75 m. in length, is deep and rapid, and waters a rich alluvial plain in Friuli, including all Gradisca and Gorizia. In its upper course it unites with the Natisone. Its tribs., mere mt. torrents, are the Idria, Torre, and Vippaco. At the tn. of Gorizia it is about 10 ft. above sea-level. It was the seen of the defeat of the barbarian king Odoacer by Theodoric in A.D. 493. In the First World War, being in what was then Austrian ter., it was early the obthen Austrian ter., it was early the objective of the Its., whose armies reached it in 1915, their aim being mainly directed to the achievement of their traditional irredentist dreams. But this was all they were destined to accomplish for some time, for in 1916 the Austrians weakened the 1t. hold on the I. valley by a determined advance in the Trentino. The 1ts., however, aided by Brussilov's drive on the E. Front (see Brussilov, Alexei Alexeie-vich; Russian Front (First World WAR) launched a strong counter-offensive along the riv. and, on Aug. 1, the first day of the move against Gorizia, carried the heights on the W. bank overlooking the tu., storming the summit of Monte San Michelo and, after sev. more days' fighting, capturing all the heights W. of the riv. together with Gorizia. They were now appreciably nearer their goal of emancipating Triesto: but thereafter Cadorna, under whom these successes had been won, suffered his historic defeat at Caporetto (see Caporna; Chioretto). No further fighting of decisive importance took place on the L, the issue being decided on the Playo.

Isopoda, name of an order of Malacostracan crustaceans, characterised by a broud, flattened body, with no carapace, and by lamellar legs, whose inner rum serve as branchle, situated on the abdo-men. They have many features in common with the Amphipoda, as, for instance, the sessile eyes and the firm, calcareous covering of the body, but the abdomen of is stuated posteriorly. Some of the larger species inhabit the bed of the sea, others are inhabitants of fresh waters, and many are parasitic on the bodies of fishes and crustaceans. 1. are divided into two sections; under I. Genuina are grouped Omiscoidea, wood-lice, the only terrestrial forms, Asellota, Phryatoleedea, Valvifera, Flabellifera, and Epicaridea.

Isoprene or Methyl - butadiene (CH₂: (Me · CH · CH₂), liquid which boils at 36-37° C. It is a member of the olefine series of hydrocarbons, and can be obtained by the distribution of caoutchous or synthetically from isoamyl alcohol (which is present in fusel oil). I, has attracted much attention became it may readily be converted into substances resembling rubber, but synthetic rubber as hitherto made is generally inferior to, and

more expensive than, the natural product.
Isopyre, greyish or black mineral, consisting of silicates of lime, iron, and alumina.
It has a vitreous lustre like obsidian.

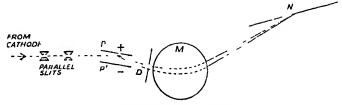
Isoquinoline, see LEUCOL.

Isotelus, name of a genus of trilobites found in the calcareous strata of the U.S.A. Isothermal Lines (from the low, oqual, and θερμος, heat), also called Isotherm, connect places on a map where the tempor on the earth's surface is the same at any given time at the sea-level. Isothermal lines to the same at any given time at the sea-level. Isothermal charts afford a ready means of studying charts ahord a ready means or knodyna relative temperatures and may be drawn to indicate the average monthly, scasonal, or ann. temps. They show how temp. is affected by land and sca.

Isotopes. The word isotope was intro-duced by Soddy to embrace those in-stances where two or more individuals of

different atomic weight occupied the same position in the Periodic Table. I. have identical atomic numbers (excess of protons over electrons in the nucleus-see ATOM), whilst the number and distribu-

covery of I. of very general occurence. The elementary gas to be examined is subjected to an electrical discharge (see Discolarge Tubes) under high vacuum, whereby some rays carrying positive charge result. These rays are allowed to pass through a slit in the cathode to an observation chamber boyond. The diaphragm D selects rays which have been phrigin D sciect rays which have been deflected by the electrical field imposed by the oppositely charged plate PP, and they are then brought to a focus on the photographic plate N by the operation of a magnetic field introduced by the electro-magnet M (see Fig. below). A mass spectrum depending on mass alone is ob-tained at N. Each isotope gives a record of its presence, and its atomic mass can be found. Thus, chlorine contains two I. of atomic masses 35 and 37 mixed in such ATOM), whilst the number and distribu-tion of electrons outside each nucleus are the same. For practical purposes, their chemical and physical properties agree. The same one part in 1000) except



POSITIVE RAY SPECTROSCOPE

Though in the case of the isotopes of hydrogen (1.008). Aston later made a hydrogen, viz. hydrogen itself (atomic more powerful apparatus, and has obweight 1), deuterium (atomic weight 2), and tritium (atomic weight 3), the chemical upossibly physiological properties are noticeably different.

Separation of Isotopes.—Chemical

Ordinary lead (atomic weight 207.2; methods in general are unsuitable, but atomic number 82) is isotopic with radium tother methods such as distillation, C (atomic weight 206.05), a disintegration evaporation, diffusion, effusion, and centri-G (atomic weight 206.05), a disintegration product of uranium; with radium 1) (atomic weight 210), a product of the dis-(atomic weight 210), it product of the disintegration of radium; and with thorium D (atomic weight 20s). Richards obtained the value 206-08 for the atomic weight of lead associated with the mineral elevoito, whilst Honigschmid reported 207-9 for lead from thorito deposits. During radioactive changes (see Radio-Activity) the effect of an element losing a β particle (an electron of negligible mass) is to shift it one place to the right in the Periodic Table, whilst the loss of an a particle (identical with the helium nucleus of four protons and two electrons) shifts if an element loses two β particles and one a particle, a new element is formed occupying the same position in the Periodic Table (an isotope). Again, an atom of uranium (atomic weight 238) can lose eight a particles and six β particles giving

jugalisation have been more such ssful, in particular cases—e.g. manium 238 and aranium 235—separation has been effected on a comparatively large scale.

Most elements have isotopic forms, and some (c.g. xonon, tin, and cadmium) have

Isotropy (Gk. ίσος, like, τρόπος, character), condition of having uniform characters throughout. The term is especfally applied, in physics, in connection idly applied, in physics, in connection with substances or media in which elastic stresses are propagated uniformly in all directions. Such substances are termed instropic, and the possession of the quality supposes that the molecular structure of supposes that the molecular structure or the medium is homogeneous throughout its substance. Non-homogeneous media, on the other hand, are known as ariso-tropic or heterotropic. In crystallography, I. is a property possessed by certain crystals of the cubic system which have an element of atomic weight 238 - 4 \ an element of atomic weight 238 - 4 \ as = 206.

The Positive Ray Spectroscope (Aston, 1919) has been invaluable for the disbryology, is applied by Pitiger to that

condition where there are no predetermined axes

Isoutriles, see ISOCYANIDES

Ispahan, or Islahan, to and prove of ran (Persia) The provision industrial (Persia) The provision build on the North Asshau and Itiq, on the Boy Lezd on the Soviets and Masshau Its pop is over 500,000 Wheat, its, cotton, opum, and tobacco are produced in plenty The tn, once the cap of Persia, lies on the Zavendch R, which is spanned by fine bridges connecting the city with its or me pridges councing the city with its Armenian suburb Juli, the surrounding plain is covered with firthe gardens and orch irds. The Chihil Sutun, or Hall of Jorty Pillus, Hasht Behesht, the pilace of Shah Abbas, I and the Meylid i Shah, or Royal Mosque, are splendly remains of the days of I is glory before the Atchans depublished it. in 1722. Trades Aighans demolished it in 1722 gather in crowds along the busy baznars, but whole streets are now in utter deso lation. Pop about 100 000

lation Pop about 100 000
Ispirescu, Petre (1830 87) Rumanian writer b at Bucharest the son of a bir ber Aquired a pinting estab and pinted the records of the Rumanian Academy In 1862, he began to write popular tales, and left as his literary legacy miny books of folk tales and the reputation of being the best in his line in his particular.

his native lind

Israel (God fighteth) name given to the patriarch Jacob on the occusion of the firmous incident related in Gen NAM and the name also come to be given to the tribes of the Hebs collectively and as a nation In later days is will be seen the name was restricted to the \ kingdom of I proper, while the \ kingdom was known as Judah (Fer the modern secular state of I, see the following article 1 It is proposed in this article to deal with the hist of the Hebs from the time of the Patriarchs to the full of the temple (For Patierchs to the full of the temple (kor their hist since that date see I ws) The accounts which the Hebs the inselves in later days give of their engine are con t uned in the carly books of the Bible, and these are largely based upon graune tradition. But, as will be seen from the articles on the separate books they under went much editing in the course of years always with a view to securing their greater conformity to a scheme and to in then creasing their did acta character More over, they show a general tendency to imagine later conditions is present in primitive times. The in extens of the Israelites were certain of the pastoral tribes having their abole in the wild tracts to the S and F of I il stine, of S Semiti (and probably of Arami an) stock Their nearest kinsmen were I dom, Am mion, and Moab About 2009 a c they migrated under their tribal chaf, Abraham, from Haran in Mesopotamia into the land of (ansan Here the tribes con timued to lead a pastorial life and ulti mately, in the time of Jacob, a famine in the land of (ansan led to a fresh inigration into Egypt In the Biblical narrative the whole twelve tribes are mentioned as taking part in this migration, but it is important to notice that the movement is (c. 1020 BC) to the exile—Saul soon

especially associated with the name of Joseph, that is to say, the aucestor of the chief of the N tribes which formed I proper Here they obtained leave from Pharach to dwell in the land of Goshen, where their continued adherence to their own customs and pastoral life led them to be accounted barbanans by the cultured lu I gypt they were sub Lgyptians I gyptains to I gypt they were subperted to repressive measures, induced by
a feir lest they should ally themselves
with I gypt's focs. Then there arose the
figure of Moses, the great founder of both
the religion and the law of 1. Moses was
the som in law of a priest of Midian, and at Sinal, the int of God he heard Horeb / the call of Yahwah (Ichov th), his father's God to deliver I from the bondage of He had much difficulty in rousing FEVPt the enthusiasin of those he was sent to save but ultimately the work was accom-plished by means of the nuracle wrought by Y much on behalf of his people. Moses led the Israclites to Mount Sman, and herea coverint was salemnly made with Yah with and the new religion of I was minimited bised up in a conception of the Dorty more spiritual than any which had set been conceived from Smai they pessed to the work of conquering (mein for which they had set out attempt made it kidosh on the 5 frontier was no necessful and they returned to the wildciness for a time which according to the Libbe il nuritive made the whole peried forty years. During this time Moses died and it was under Joshu'i that the entry into Palestine was finally made. Details of this are given in the Book of Jo hu i

The Isrulites now settled down to an and commercial life entering in 8 2) 10 many cases into treatics of friendship with then (mainite neighbours | this weak ened the bonds of union between the varions tribes and might well have led to the ultu ite fusion of the races This was treverted by the use from time to time of the shofetim, or Judges, who roused the dyn ardour of the tribes lifteen such her s we named in the Book of Judges After to-hua comes a long period of falling in it relieved by the occasional rise of a deliverer Among the rest of the the most funous are Deborah

Jules the prophetes, and Banak, Cideon, leghthan Samson and the prophet Smuch During this period I does not corn it all into contact with the great kined his of the Last, and their conducts were rather with their own kinsinen, the Manufact Ammontage and also the Medutes, Ammonites Manuales The Philist and also Minimites The Philistines were among the most powerful opponents of I, and it w) while suffering under defeat from this face that the Jows cried for a king, not only that by this centralisation of authority mere he idway might be made against the my iders, but also that they might be like all the other nations. Samuel the prophet, who was at that time their leader, reluctantly consented to accede to then desires and chose as their king Saul, the son of Kish

proved his fitness for the new position which had been given to him by brilliant of Jabesh Gilead, after which he was or Japes thend, ander which he was solemnly problemed king at fellgal, and then by a decisive victory over the Philistines at Micmash Here the victory widuo chieffy to the bravery of Saul's son Jonathan and six hundred Benjamites who a companied Saul who was a member of their tribe Saul was himself a great and his next compaign wis warriot, and his next campaign wis against the Amalckites who had long been troubling Jud it. He was however, given to fits of madness, and to quiet him in these, David the son of Icsse the Both lemite, a cuming player on the harp was brought in to play to him. His pre-sence, however had a bad effect on Saul and this was increased by David's rapid rise in popularity His comage and suc rise in popularity and to make him his cess in war had led saul to make him his atmour bearer, and his intimate friend ship with Jonathan, the king's son, rendered his position such as to cause saul's deted his position such as to cause Saul's jealousy Morrover he was the king's son in low Hence Saul decided to slay David, who in consequence became an out law, ultimately having his centre of opera-tions at Ziklag. The resolutely refused to enter into operations of in 11 and events were so shaping themselves that it was possible for him to return in power on 5 and 5 death. This occurred at Mount (a) box and David on he tring of it, unmedi ately went up to Hebion with his followers and was anomited king of Judah. while Abner Saul's leading general, had taken Saul's son Ishbild to Mahanaim and there had him crowned as king of I War in consequence broke out between I and Judah, in which the b Lingdom was stadily victorious. On the death of Abnet and Ishbell, the crown of 1 was offered to land who immediately took up the work of uniting the two dies. He transferred his cap to Ichus (Jerusalem) the great hill fortress of the Johnstes whose position had butherto constituted than a better in the constituted. them a birrier between N and S, and thither he brought the ark. But th Philistines, though they had acquiesced in David Sovercamty of Judah could not acquiesce in this extension of his power and war resulted. In a succession of willout conflicts Divid secured the free dom of his kingdom and pushed it hound tries in the \ \to Dan, \sigma to Beci sheba, and \W \to the Pha inclan frontier The L boundary was continually chan-ing David's great work, however, was in the consolidation of the kingdon, and his internal administration. To him too the idea of the national sanction. I Jerusalem soon to become the Lemph lo him too owed its incoption. His high poetic and religious faculty is attested by his pailing and by those of the school named from him The crown passed from David to his son, Solomon, whose name is associated

daughter Solomon had espoused mercial treaties were entered into with such in ighbouring monarchs as Hisan of Ivic, in union with whom ships were sent as far as Tarshish (Spain) and Ophir (Saraha V) Solomon now led the life of the ordinary F despot. His court was in ore splended than any other of which we read in the hist of I, but such magnificant could be sustained only by a heavy tay ution. Mutters reached a crisis on the death of Solomon (930 BC). A deputation he ided by Ictoboun, which c me to solution as son Rehoboam, to ask reher from the burdens which his father had full upon the country. There were two ful upon the country. There were two courses open to hun acquissence in his people demands or an attempt to intimidate them. He chose the latter and the immediate result was a revolt of the ten tules of land under Jeroboum, the son of Judih and Benjamin alone were No but left to Rehoboum while I, for the name is henceforth reserved to the N kingdom, made Jeroboum its king

At this point it will be well to make i short digression, and to consider the main points in the religious condition of the Hets. The anct Hebs had no conception of Y thuch (Jeliovah, q t) as the God of the whole earth. He was regarded to the state of the control of the state of the control of the nation though not as the only God who might be worshipped. This latter con-aideration explains the frequency of tho vice the tenants the requests of the filing away of the lens from Jehovah, which would be inexplicable on the hypothesis that they recognised Him as the one God. But the Israeliush conception of the Deity advanced rapidly and as a result their moral ideal was fur higher than that of the surrounding nations on a continued during the period of the ludges though as we have seen, relapses nt i foreign cults were free uent In this ic iod the functions of the prophets, such a Deborth was to bring back the people to the conception of Yahweha the God of their nation to provent in fact, the re-ben of Yahweh being entirely versome ty heithen cults. The in tith con of the remarchy heralded agreet change. Dayid brought his royal sanctumy at Jerusalem it pir minone, and the next reign saw the decretion of the Temple. Its purpose we that here, at certain ann fostiwals, the whole people might gather for a trough least. Though later tradition whole to Moses were customary the in titution of a priestly succession in the inc of Aston, the institution of the her nehr is, in point of fact, post exthe scribers were offered by the head of the nation, clan, or family, or by a prophet When Jeroboam in tituted a new king ion therefore, one of his first acts was to prevent the Israelites from going up to leep the ann festivals at the Temple Ho did this by instituting or reviving sanctuances at Bethel (and Dan?), where he his son, Solomon, whose mane reasociated that its at Bethel and Pairly, where he by tradition with power, wisdom, and set up golden alves as symbols of tahwealth
Now for the first time, I took a prominent place among the great nations of the R., though it is probable that it was in the tetrograde step towards idolatry some degree subject to Pharaoh, whose shown by the creation of the golden

calves. The great period of the prophets was the eighth century B.C., to which belong many of the greatest of the Messlanic prophecies, such as those in Amos ix, 11, Hosea iii. 5, and those in the earlier half of Isaiah. The high spiritual feeling of the age is also well shown in the Book of Deuteronomy, from which Our Lord quoted the two commandments on which hang all the Law and the Prophets. The idea of Yahwehas the judge and ruler of the whole world was now generally accepted, and a still greater development is seen in the emphasis laid upon the moral responsibility of the individual by such a prophet

as Jeremiah. To return now to the political develop-During the two centuries that ment. clapsed between the death of Solomon and the conquest of I. by Shalmanezer, king of Assyria, nineteen kings reigned in the Assyria, nineteen kings regions have kingdom. These nineteen kings may be kingdom. These periods. The regarded as covering four periods. The first period (930-890 B.C.) is occupied in attempts to establish a dynasty and in wars with Judah. It ended in civil strive, from which ultimately energes the new dynasty of Omri, which gives us the second period from 890-813. Its kings, after Omri himself, were Ahab, Ahaziah, and Johoram. The reverses which Omri suffered at the hands of the Syrians were made up for by Ahab. This king was a made up for by Ahab. This king was a great statesman, though the injury his idolatry did to I. is well shown in the Biblical narrative. He formed an alliance with Jehoshaphat, king of Judah, the alliance being cemented by the marriage of Jehoshaphat's son, Jehoram, to Athaliah, daughter of Ahab. The two nations then took united action against the Syrians, with whom, after the defeat of Benhadad II., a treaty was formed. Ahab died in battle at Ramoth Gilead, and in the reign of Jehoram an attempt was mode in union of Jehoram an attempt was made in union with Ahaziah, king of Judah, to retake this tn. Now occarred the rebellion of Jehu ben Nimshi, in which Jehoram and Ahaziah both perished. Jehu founded his dynasty (which forms the third period, 843–740) in a sea of blood. Down to the time of Jehu, the soverentry of Judah had remained in the possession of the house of David (six kings), but on the death of Ahaziah an attempt was made by Athaliah to exterminate this dynasty. Jossi, however, escaped, and after six years was proclutined king by Jeholada, the chief priest. Athaliah was slain and the Davidic dynasty restored. A fresh attack now came from Hazael, king of Syria, who was bought off by Joash. There now succeeded for Judah a time of comparative prosperity and quiet. ters changed with the accession of Tiglath-Pileser III. to the throne of Asyria in 745 B.C. At this time a general confederacy of Syrian states against Assyria was being promoted, but Ahaz, king of Judah, refused to join it. He relied instead, in opposition to the prophet Isaiah, upon friendship with Assyria. Hence the Syrians and Israelites opened a campaign against him, in which they then were joined by the Edonites. Tiglath-Pilesor entered N. Israel in support of Ahaz, and

deported into Assyria the leading inhab. of Galilice and the dist, around. Ite also extinguished the Syrian monarchy, and set up Hoshen as vissal king in I. For some years Hoshea remained submissive, but he was then persuaded to revolt by So. king of Egypt. Hence Shalmanezer IV. marched against him, and for three years besieged him in Samaria. The city was eventually taken by Sargon (722 B.c.), and the chief inhabitants of 1. to the number of 27,290 were taken into Mosopo-tanna and Media. They were replaced by tamia and Media. They were replaced by Assyrian colonists, and these, internaxing with the inhab. of the country, formed the mixed race known as Samaritans. The kingdom of Judah had, after all, survived its more powerful neighbour. Here Ahaz was still king, but he was succeeded a few years later by his son, Hezekiah, who attempted a reform in the religion of the country, which had been much deleased. country, which had been much debased under the preceding kings. Helmangurated a campaign against local sanctuaries and strove to restrict worship to the Temple, In this he was assisted by Isaiah. Judah was still subject to Assyria, and Hezekiah's friendship with Egypt brought him into danger of punishment from Sennacherib, An Assyrian army was, indeed, approaching Jerusalem when it was arrested by a plague. Egypt was, moreover, prepared pagae. Egypt was, moreover, prepared to support Hezekiah, and so Sennacherib retired. On the death of Hezekiah the succeeding princes encouraged the heathen cults in their worst forms, but another and greater reform came on the accession of Result (521 to 2). Competed a seciety. Josah (621 B.c.), connected especially with the finding of the book of the law (see DILTERONOMY) by Hilkiah the priest. Meanwhile the Assyrian empire was breaking up, and Judah came into collision with Pharaoh Necho L., who was desirous of pushing the interests of Egypt. In con-dict with him Josiah fell at Megiddo (608), flict with him Josian reil at ategrado (1918), while Jeboahaz, his younger son and heir to the throne, was carried into Egypt while Nechoset Josiah's eldest son, Johoi-akim, on the throne of Judah. In 605 Egypt became subject to Babylon, and Judah became subject to Nebuchadan enzar II. before 600 B.C. In 598 an attempt to regain his independence was made by Jeholakim, and Jerusulem was besieged. Jeholakim, the boy-king who had suc-ceeded his father, was taken prisoner, and in the following year (597), from which Ezekiel reckons the years of the captivity, the greatest and noblest of the Joss wero deported to Babylon, while Zedekiah was deported to Babylon, while Zedekiah was appointed king over those that remained. In 586 a fresh revolt led to the sack of Jerusalem by Nebuchiduczzar and fresh deportations. There was still no peace, however, for Gedaliah, the Babylonian governor left in charge, was assassinated but the remnants of the Jows fled into Egypt, taking with them the prophet Jeremah.

From the Exile to the Revolt of the Maccabes.—The exile was a distinctly providential step in the development of the Jowish religion. Now, indeed, the true idea of the Messiah first clearly appears in such writers as Deutero-Isaiah, generally allotted to this period. The synagogue

was now instituted and the general conception of the after-life was developed under Persian influences (see HELL). But although those Jews whose minds were fixed chiefly on commerce found them-selves better off in Babylon than in their own country, the idea of absence from the Temple was intolerable to the religious. Hence it was not long before attempts were made to secure a return to Jerusalem. Nothing more is known of the hist. of the return from exile until the reign of Artaxerxes Longimanus (162–125), when a band of some six thousand exiles, under the leadership of Ezra the scribe, arrived in Jerusalem. In 116 the city of Jerusa-lem, was re-fortlied, and the Temple wor-ship re-instituted. To this period belongs the final split between the Jews and the Samaritans, made by the establishment by the latter of a rival sanctuary on Mt. Gerizim. Palestine was affected by Alexander the Great's much through the E., and, on the deteat of the Persians at Issus in 333, it became subject to Gk. rulers. large number of Jews were deported to form part of the pop. of Alexandria. On the subdivision of the kingdom on Alexander's death, Palestine fell to the lot of the Ptolemies, under whom still larger numbers of Jews pas ed into N. Africa. The lot of Palestine was, on the whole, fortunate until the reign of Ptolemy Philopater, when the Jews were much op-pressed. After the defeat of the Egyptians, Antiochus III, incorporated Palestine with the dominions of the Sciencidic (197). deliberate attempt was made under the next sovereign, Antiochus Epiphanes, to stamp out the Jewish religion. Its peculiar rites, such as circumcision and the observances of the Sabbath, were strictly forbidden, while the Temple was dedicated to Zeus, and sacrifices offered there. Thou-sands suffered death rather than give way to such coercion, but ultimately a deliverer arose, who inaugurated one of the greatest and most heroic periods in Jewish hist.

From the Maccabees to the Destruction

of the Temple .- Hitherto the resistance of the Jews had been mainly passive. Active resistance came from the family of Mat-tathias, an aged priest of the vil. of Modeln. He slew a Jew who was offering sacrifice to heathen deities, and slew also the Syrian officer who was supervising. taking with him his five sons, he fied eastward, and guthered round him in the wilderness a great company who would with him take aggressive measures, fighting it need be, even upon the Sabbath itself. The act was a desperate one, and a measure of success was rendered possible only by the internecine struggle for the throne which distracted the Syrians themselves. Mattathias, who was an old man when he commenced the revolt, soon died, handing on the lendership to his son Judas, surnamed Maccabeus, the hammerer, from which his whole family has received the name of the Marcabees. Judas was a great warrior and a fervent believer in his cause. He defeated Apollonius, a prominent Syrian general, and finally, Lysias, the viceroy himself, at Beth-zur. Being now master of the country around the cap.

Judas decided to make Jerusalem the centre of his operations, and hence the Temple was fortilled and re-dedicated. After being besieged in the Temple by the Syrians, in 162 B.c., permission was granted them to exercise their religion freely. But the Maccabees resolved to continue the struggle for political freedom. The secular struggle was to be less successful than the religious. It began well, with the defeat and death of Nicanor near Beth-horon, but this was almost immediately followed by an overwhelming vic-tory for the Syrians at Eleasa, in which Judas himself was slain. The leadership of the party, which was now scattered far and wide, fell to Jonathan, the brother of Judas who was able by skilful diplomacy to secure peace on favourable terms, ultimately being himself made high-priest in 153. In 113 Jonathan was slain in the quarrels for the throne of the selectedar, and smoon, his brother, became leader of the Maccabean party. He fortunately esponsed the cause of Demetrius II., from whom he secured a regignition of Falestme's independence (112). So famous a year was this that it was considered the beginning of a new Jewish era, and from it dates were counted and come were dated. Simon, who was made high-prest in 111, was a wise and prudent ruler, and under him the country enjoyed comparative quiet, and in the one important contlict, that with Antiochus Sidetes, Simon was victorious. But there was still much schemmp and party strite. Ptolemy, Smoon's son-in-law, was striving to secure the supremacy and as a step to this Smon was assassinated. But the crime gained Ptolemy nothing, for the power fell into the hands of Simon's ambitious third son, John Hyreanus, who assumed the high-priesthood in 134 R.C., and with it the sovereignty. The reign of John Hyreanus was outwardly most prosperous, though at the beginning he was hard pressed by Antiochus. Later in his reign (131-104) be extended the Jewish dominious considerably in all directions. The sanaritans were reduced and the Temple' on Mt. Gerizim was destroyed. He further subdued the Galileans and Idameans. During his reign, however, Idumacans. During his reign, however, there is visible the rise into political prominence of the Pharisees and Sadducees. John was led to throw in his lot with the latter of these on account of that opposition of the Pharisees to his family which was to continue throughout the period of the Hasmonean dynasty. On his death, his son, Aristobulus I., succeeded to the throne by the murder of his brother, and regued but one year, during which he reduced the Itureans. He was followed by Alexander Janneus, a warrior prince who almost entirely neglected his sacerdotal position, his chief aim being the extension of his ters. He met his death (76 B.c.)

in a cumpaign against the Arabians.

After him, the high priesthood fell to Hyrcanus, Alexander's oldest son, but all power remained in the hands of his mother Alexandra, who accorded a much greater share in public affairs to the Pharises, But Hyrcanus's younger brother, the

energetic Aristobulus II., angry at his ex-clusion from a share in the gov., raised an army and deposed Hyrcanus. Then, as army and deposed Hyrcanus. Then, as the supporter of Hyrcanus, there arose Antipater the Idumean. This man in-Antipater the Idumean. This man induced Hyrcanus to place himself under the protection of Arctas, king of the Nabatæans, by whose ald Aristobulus was defeated. The Roms. now took a hand in the struggle, and Pompey, in 65 s.c., sent his legate, Scaurus, to settle matters, which he did in favour of Aristobulus. This decision was reversed two years later by Pompey himself. by Pompey himself. Hyrcanus was made high-priest, but the gov. of Judea was attached to the Roman prov. of Syria. In 57 an attempt was made to set Alexander, the eldest son of Aristobulus, on the throne. Alexander was taken prisoner by Gabinius, governor of Syria, and in order to break up what unity remained among the Jews the land was divided into five administrative dist. Aristobulus, who had been taken by Pompey to Rome, now escaped and raised a second ineffectual revolt in 56, and this was followed in 55 by a last attempt under Alexander, which was put down by Gabinius. On the death of Pompey, however, Hyrcanus made his submission to Cæsar. Antipater the Idu-mean then secured for himself the post of procurator of Judea (17 B.c.), while to Hyrcanus was left only the high-priest-hood. Thus ended the Hasmonean dynasty. Autipater also succeeded in dynasty. Antipater also succeeded in making his eldest son, Phasel, governor of Jerusalem, and his other son, Herod, governor of Galilee. But the patriotic Jews viewed with horror this estab, of an Idumman dynasty, and set up Aristobulus's last remaining son, Antigonus, as his rival. Antipater was poisoned and Phasel committed suicide in prison, but Herod invoked the aid of the Roms., and in 37 invoked the aid of the Roms., and in 37 secured Jerusalem. Antigonus was put to death in the same year. Herod carried on the difficult task of ruling Judges by the aid of the Roms., and with the utmost cruelty. On his death the kingdom was divided into totrarchies, ruled respectively by his sons Antipas, Philip, and Archelaus, the last-named ruling Judaa and Samaria. His rule, however, was so cruel and despotic that in the year A.D. 6 Augustus deprised him of his power and sent him into exile. His tetrachy was then attached to the province of Syria Henceforward, except for the brief period from A.D. 11 to 11, Judaea was under Rom. procurators. During these few years it was ruled by Herod Agrippa, whose favour with Claudius secured to him all the ters, over which his grandfather had ruled. On his death there was a period of ruled. On his death there was a period of dreadful anarchy and interaction strict between the inhabs, of Pulestine, which was increased rather than lessened by the actions of the procurators, many of whom were in league with the worst clements of were in league with the worst elements of the pop. From the chaos there rose a fana-tical party known as Zealots or Sicarli (Assassuns). These rose in revolt in the year 70, and a bloody struggle ensued, terminated only by that bloodiest of all scenes, the destruction of Jerusalem by Titus (A.D. 70). See also Hebrews.

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Israel, a secular Zionist State in Palestine, the precise boundaries of which remain to be settled. (For the hist. of the anct. Heb. nation, see preceding article.) The state is the ultimate development of the institution, after the First World War, of a national home for the Jews in Palestine through the mandate granted by the Alhed and Associated Powers to Great Britain. The General Assembly of the United Nations in Nov. 1947 approved the partition of Palestine into Jewish and Arab independent states by a majority vote, and a United Nations Commission was entrusted with the duty of partitioning the country (see further under Palestine 1718). The state of I. came into existence on May 16, 1948, on the day following the termination of the Brit. mandate, in confirmation of the Brit. mandate, in confirmation of the brit. mandate, in confirmation of the state followed soon afterwards, and before long his lead was followed by more than thirty other members of the United Nations. On May 11 the State of I. was admitted as the lifty-ninth member of the United Nations. Un May 11 the State of I. was admitted as the lifty-ninth member of the United Nations by a plenary session of the General Assembly which by 37 votes to 12, with nine abstentions, endorsed the favourable recommendations of the Security Council.

The United Nations' partition scheme

divided Palestine into no fewer than eight segments; but the achievement of the segments; but the achievement of the precise application of this scheme was still laifling the power of the United Nations in 1919. Meanwhile by force of arms the Jews had inilitrated everywhere excepting the Jerusalem-Tulkarin-Jenin tilangle and the areas held by them included all Galilice and, in the S., almost all the Negeb. They had also secured Haifa as a reinforcement base; Jaifa had become a Jewish the, so also Nazaroth and Beersheba; while the K. Negeb was occupied by Jewish forces down to the gulf of Akaba. Moreover, though the United Nations' scheme of partition (which I. had accepted) included the new Jewish Jerusalem in a special International Zone, Dr. Chaim Weizmann, the first Israeli president, declared that it was inconcelvable that the city should be placed under 'foreign' rule. Furthermore Jewish

propaganda was already envisaging Jewish settlement eastwards into Transjordan. The net result to the Arabs of the Jewish military successes was that the number of their refugees reached the appailing total of 600,000 including the pop. of Jaffa, Acre, and Nazareth, who fied in panic after details became public of the massacre by Irgun Zwi Leumi and the Stern Gang of the inhab. of Deir Yasin, an Arab vil. near Jerusalem, and the number was further augmented by the forcible eviction of the Arab inhab. of Arab yils, by victorious Jewish troops in

order to make room for Zionist immigrants. Within the Jewish-held areas of Pales-tine the Israeli gov. put into force the plans which the Jewish Agency had worked out in readiness for the termination of the Brit. mandate and by early 1949 the Tel Aviv Gov. had an organised 1949 the 'l'el Aviv Gov. had an organised administration. Jewish courts were functioning; there were Jewish depts, for war, finance, foreign affairs, posts, telegraphs and telephones, raliwars, public works, education, police, immigration, and antiquities; there were two wireless stations—Kol Israel and Kol Hierushalayim (the Volces of Israel and Jerusalem); the full H press appeared, as well as the Eng. Palestine Post in Jerusalem and an Arabic daily nowspaper El Yom (the Ibry) was printed and ed. by salem and an Arable daily nowspaper El Yom (the Day) was printed and ed. by Jews in Jaffa. The State of I. took over three para-military unofficial organisations: el Haganah, a large well-equipped force; the Irgun Zwi Leumi, a smaller body organised on commando lines; and the Stern Gang, a gangster formation specially trained for murder (it was finally proscribed by the laracii authorities). In addition, since the mandate ended a large number of men specially trained in Hunaddition, since the minimus chief a page number of men specially trained in Hun-gary and elsewhere in E. Europe were brought to Palestine and absorbed into the Jewish army. The total Jewish fight-ing strength was unknown but was esti-mated at 100,000 men and women. They were much better equipped and armed than the Arabs and much of their material came from Czechoslovakia. It may be noted here the difficult questions of nationality may arise in W. countries which have accepted the Balfour Declaration (q.n.) and have recognised or will recognise the State of Israel. But no Middle E. country ever accepted the Balfour Declaration and none had recognised the Declaration and none had recognised the Declaration and Note had been also as the second state of the State had the second state of the sec Israeli State before late in 1949. the status of the Jewish communities in the various Arab countries remains to be settled. In Iraq there are 73,000 Jcws; in Egypt, 63,000; in Syria, 30,000; and in Libya 30,000. Now that there is Israeli nationality, these Middle E. Jews have become foreigners; the decision whether they will be naturalised or asked to leave rests with the Arab Govs.

Lisa pioner country, but different from the country but dif the various Arab countries remains to be

I. is a pioneer country, but differs from to the clurgy. The paradox here in other pioneer countries in the fact that present day I. is that of a Socialist the cap, required for the absorption of the country under clerical sway, which may new immigrants into its economic life has been supplied not from foreign loans the fact that its herees are still the Probut from the immigrants' own assets and from the donations of world Jewry. Thus the fact that its herees are still the Probut from the donations of world Jewry. Thus while this state of things may last for I. has hardly any foreign indebtedness and is some years the young native generation,

has a credit balance of cap. The rate of economic progress in I. will doubtless con-tinue to be determined by immigration and cap. importation, and everything scens to indicate that after the return to normal political conditions Jewish private Cap. will be invested in I. on a large scale. Jewish industry in I. was a creation of the immigration from Central Europe which began about 1933 and made great advances during the Second World War. Thus the diamond industry began during the war and great quantities of cut stones were exported to the United States. The chief articles of industrial export, besides polished diamonds, are Dead Sea chemicals petroleum products, artificial teeth, and soap. The export industry of citrus concentrates is steadily growing. Olives, mostly cultivated in the hill areas, form the next most important crop. Vegetables are grown extensively, and also grapes and hgs. Of great importance to the develop-ment of Jewish industry are the laboury of the Rechwoth Research Institute carried on under the direction of Dr. Chaim Weizmann and Dr. David Bergmann. Much development has been achieved by the Jews in Palestine. The modern vils. in the desert, the drained marshes and in the desert, the drained marshes and reclaimed dunes, the schools, hospitals, factories, and social services are all evidence of their practical activities. The Jews in Palestine have remained untouched by the native mode of life; they have not learnt from the Arabs how to build houses that are cool, spacious, and cheap—this conservation being the result of the invigerants having come from sult of the imi digrants having come from the Diaspora, from the ghettoes and suburbs and displaced persons' (q.r.) camps of the world and having brought with them scrups of allen civilisation packed up in transit. Life in I.'s cap, has an amorphous quality that gives the impression of being the large Jewish suburb of a non-existent city.

of a non-existent city.

The Socialist parties in L., with their materialist and anti-clerical doctrine, occupy all political and economic key positions. Yet life in 1.18 (1919) nevertheless under the sway of clericalism as in no other country of the wolld—a paradox in view of the fact that the orthodox religious element represents only about 13 per cent of the pop. 1. has a univ. on Mount Scopus in Jerusalem, but no medical faculty there manny because dissecting bodies is against Mosaic law. The dominant political party is the Labour party (Mapai), which commands about one-third of the total voice and can rule only in coalliton—either with the United Workers' party on the extreme Left or with the Revisionists and other Hight wing groups, and it is said that if it wishes to rule independently of the extreme leight and Loft it must make concessions to the clurgy. The paradox here in present day I. is that of a Socialist country under clerical sway, which may be explained by the gap in its hist and the fact that its herees are still the Prophets and its only classic the Bible. But while this state of things may last for some yoars the young native generation.

which is already playing a dominant part in the Israeli army, has no memory of ghettoes, is developing a native folklore and national tradition of its own, and may well carry out a bloodless secular div. between Church and State.

A common language of the immigrants of recent decades was a practical necessity, and the choice of Heb. followed naturally. The movement to revive Heb. began in

a continuation of W. thought, art, and values, or on a veneer of Levantinism.

The Knesset, the name for the Israeli constituent and legislative assembly, met for the first time on March 8, 1949, in its permanent home in Tel Aviv. Immigration and development figured largely in the gov.'s programme, it being proposed to launch at once a four-year development and absorption plan to double the pop. in



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ISRAEL: YOUNG JEWS MARCH TO WORK ON A NEW SETTLEMENT

The Hebrew inscription on the makeshift ceremonial arch reads (translated): 'Be this village a nest of securiles (safety) to us, to our sons (children), and to all the refugees of (the people of) Israel'

Palestine in the 1880's; by the end of the [First World War it became, with Arable and Eng., the official language of the country. Biblical Heb. is the language of the gov. and parliament, of schools and the gov. and parliament, of schools and courts, of press and radio. But it is not a dead language, and was not so even before Zionism (though that movement gave it a new vitality) having been a lingua franca for Jewish scholars all over the world. Its future in I. is assured. (See also Hebrews: The rebirth of the Hebrew tonque through Zionism.) At Hebrev tongue through Zionism.) At State. In the year ending about April 25, present the whole educational system is 1949, more than 210,000 Jews entered the based on developing out of its anct. roots country and over 100,000 of these arrived a specifically Heb. culture rather than on in the four months of 1949. Although

that period by mass immigration. But concern for I.'s economic condition came upon the heels of this optimistic proposal. Through unlimited immigration that condition was rapidly becoming more dan-gerous than were the advancing Arab armies in the previous year and this con-cern at length crystallised into the sombre realisation that I. could not depend indefinitely on the generosity of world jewry or foreign loans, and that only by her own efforts would I. survive as a sovereign more than 150,000 had been housed 53,000 were then (April 26) still in reception camps and suffering from great overcrowding, while thousands of immigrants who had houses were without work. In who had houses were without work. In these circumstances the gov, announced plans for an austerity plan based on the Brit. model, including a rationing system with a dictytic standard, control of imports and home production, fixing of maximum prices for essential articles and heavy surcharges on unessential goods and restriction of luxuries to export needs.

restriction of inxuries to export needs.

It was realised that a vital factor in the development of I. was the Negeb, the desert wilderness in S. Palostine reaching to the Sinai and the Suez Canal. The basis of the 1949 four-year plan was the restriction of the control of the part of the second of the irrigation of this area to provide home-steads for the flood of immigrants. Political considerations compileate the situation, apart from the possibility of oil-discoveries. Its proximity to the Suez Canal must make the area a matter of concern for Britain, and in some quarters communal settlements are confused with communism, and regarded as a danger in view of the condition of the Arab States, Large-scale development, moreover, re-quires the water of the Jordan, and this in its turn depends upon a firm understanding between I, and Transjordan.

standing between I, and Transfordan.
It is clear that I, will continue to regard itself as a member of the W, nations. The attitude of Britain, and the activities of the Arab Lagion, in a large mensure destroyed the pro-British feeling which was once latent, but the U.S.A. ha, undertaken the rôle of protector. Dollars from America formed (m 1949) a vital part of I.'s economy, this causing a move to the right in internal polities.

The behaviour of the I. Gov. fowards

The behaviour of the I. Gov. towards its Arab minority of about 120,000 has been charactised by moderation and a desire to weld them into the community. Freedom of the press and religion was estab, and Arab workers grouped into trade unions attlibute to the central Trade Union ('ouncil (Histadruth), Education and the vote were secured for women: Arabic as well as Hebrew is compulsory in State schools.

The estimated Jewish pop. of Palestine at the end of 1946 was 608,000. Jews formed the whole pop. of Tel Aviv (183,200) also of Petah-Tiqva (18,000) and Rehovot (10,200), and there were 71,000 Jews in Hata and 31,000 in Jaffa. See Musa Alami, The Lesson of Palestine

(Beirut) 1919.

Isracis, Josef (1821-1911), Dutch paintsoon afterwards he settled down at The some definite proposition of law or fact liague, where he made his home for life. Asserted by one party and denied or fact the fishing-in, of Zandy our that the poight work with the poor's suffering and the transfer of the poor's suffering and the poor's suffering an nancy of the poor's suffering and the ting forth the points on which both parties tragedy of life were first vividly revealed | desire the verdict of a jury or the magnetic to him: henceforth his pictures 'were nent of a court. To oin issue 'menus in painted with gloom and suffering,' and effect to dony or traverse a proposition in became the most sensitive and artistic ex-pression of his well of intense compassion joinder no further pleading is necessary. for the distressed and weary of mankind. Where the parties are agreed as to the I. has truly been called the Dutch Millet, questions of fact to be decided between

although he emphasised the shadow rather than the light. Among his masterpieces are: 'The Zandvoort Fisherman,' 'Village Poor,' 'Shipwrecked,' 'Cradle,' 'When We grow Old,' 'The Widower,' The Bric-à-brac Seller,' and 'Botween the Fields and the Sasshore,' I. is one of the first of wedgen waitters. Dub.' first of modern painters. Pub. : Spain, a painter's account of a journey in that country, trans. by Alexander Teixeira do Mattos. Israfil, or Israfeel, angel of music, who, Alexander

according to the Mohammedan belief, will sound the last trump from the Temple rock at Jerusalem, calling men to judg-

ment.

Issik-kul, or Issikul (Kirghiz, warm water) (1) lake in Russian Central Asia, in the L. Region of the Kirghiz S S.R., is 5000 ft. above sea-level, and covers an area of 2300 sq. m. It is fed by many strams, but the surface is becoming smaller. The water is salt, and contains a large quantity of fish. On the S. shore that the surface of the strong strains of the surface of the sur

a large quantity of figh. On the S. shore stands the th. of Przhevalsk (Karakul).

Issoire, th. in Franco, in the dept. of Puv-de-Dône, near the confluence of the Conce and Allier. It was captured by the Protestants and destroyed by the Cathehes during the religious wars of 1574-77. It has manufs, of cotton goods and machinery. There is an interesting Romanesque Church of St. Paul. Pop.

6100.

Issoudun, tn. in the dept. of Indre, France, on the Théols, 17 m. N.E. of Chateauronx, is the cap. of an arron. It has copper foundries, manufs of parchment, cloths, and agric, implements, and quartes of lithographic stone. Pop. 12,600.

Issue: (1) In law, off-pring or lineal descendants of any degree. In Eng. law the term is peculiarly appropriate to the descent (see Inheritance) or grant (q.r.) descent (see IMBRITACE) or grant (g.r.) of real property, whether by deed or will. Before the Wills Act, 1837, a devise tr.e. grant by will) 'to A and his lars, but if \(\text{de without issue, then to \(\text{t} \) and his lars, \(\text{de without issue, then to \(\text{t} \) and his lars, \(\text{de without issue, then to \(\text{t} \) and his lars, \(\text{de without issue, then to \(\text{t} \) and \(\text{de without issue, then to \(\text{t} \) and \(\text{de without issue, then the without issue, \(\text{t} \) and \(\tex neits, was constring to mean and As estate (q.c.) should descend to A sissue in tail (see Engall), i.e. as long as I, remained, when the gift went over to B and his heirs. But the Wils A t expressly enacts that the words 'die without issue' should be construed to mean die without I. It mg at the death (... of 1 in the above (xample) and not an indefinite failure of 1. The Settled Land Act, 1882, made a further change, the effect of which is that as to testators dying after 1882, any child of A who has attained twenty-one is free without form it pleadings the question being stated in what is technically termed an issue. The meaning of I in Scots pleadings is not dissimilar

Issus (modern Aisse), tu in Cilum, near where that provadjoins Same Here Alexander the Great inflicted a crushing defeat on a huge host (500,000) of Persians under Durins their king. Vist treasure and the royal family fell into the con Vist treasure

queror s hands

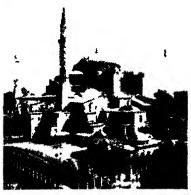
Issy, to in the dept of the seine Linux 3 m > W of Puis forms part of the S W defences of Pais It contains a school, saint sulpice formerly the residence of Margaret of Valois. It manufacts

Alexander the Great in 330 B (
Istanbul (formerly Constantinople), and

Gh Kongrai ruporohis the city of Constantine), until Oct 13, 1923 cap of Turkoy, when it was superseded by Angora (Ank u. s.) The city stands on a hills gora (Ank ii i) Inc city stands on a hilly promontory of triangul ir shape having the sea of Marmora and the Bosphorus on the s and E, and on the standard Hora, an arm of the Bosphorus It is thus surrounded by with on all sides but the W, where a strong will shuts the city off from the mainland. Lake Rome, 1 i off from the mainland Like Rome I i separated portions of our long ridge in the case of all great cities. I has spread fir beyond its original bounds, and may be said to include in argunally quite separate from itself. The name I is generally reserved for the part built on the promontory above described, and the suburbs are considered set trately. These are: to the N of the Golden Horn, tralata and Pera with tephane, to the L of the Bosphorus in N in Scut rel and Galita of which the chief orna k idikol ment is a lighthouse of the great shipping mercantile, and bankin quarter, and was not united to I until 11 > 3 Pc 1 15 marter phane is of was importato the cumon foundry from which it drives its name souther (10) is an important commercial and injustrial centre. The city of I is creelently situated, more alvantageously perhal than any Turo, on city but Nation I troud the appearance is mest picture que and imposing. At the taking of I most of the hurches were destroyed and mosques wer creeted in the most prominent situation (upol # and concrets, with graceful curves and soaring spires combine with lifty cypres sosting spires combine with lifty cypres ses to give the city an air of uning grace and to invest it with the investious glamour of the oriental world. Within the however the appearance is not so pleasing. The stricts form a labyrinth of dirty crooked and ill paved allers, while most of the houses are low and are built of wood or rough stone. During the last seventy years the ispect of things has become much more kuropean. The streets, under

them, they may, before judgment by W influence, have been wide ned and immutual consent, obtain an order from a proved lighting at night is common, and master to go to trial upon such questions. It is uropean style of building has been interested to be a few orders. be the dress of the people has changed in the care in the dress of the people has changed in the care in most parts, while the old carel service has entirely drappeared. In dress of the people has changed in the care direction. The transfer religious care direction is the people has changed in the care direction. same direction The streets are generally dull in appearance, almost all animation being concentrated in the bazaars

Almost all the important architectural and antiquitian monuments of I are to be found in the city proper first and foremost among these comes the church of at Sophia (Vyla Soper, Holy Wisdom),



W I Mansell ST SOPERA, 191 ANBUL

eracted by Constantine, and rebuilt with additional magnificence by Theodosius (41) and Justinian (38 68) Though nccessiv repairs have been executed, it is the church of Justinian that we now have the exterior appearance of the clim has disappointing but inside it is the not magnificent creation of Byzan tine at The architects were Anthemias (q r) and Indorus of Miletus The great The great ovil ended nave is 260 ft long by 107 ft. wide the central square being bounded by four luge piers each 2) ft square. These nnected by semi cucular irches, and to doing 107 ft in diameter. F 10 511]] in l W are other great semi-creular spi + each crowned with a dome. Tho our ment is extravagant in its heauty Vivil's of virious huor are irranged to form intro its patients and mosales any architectural translations are markets. After the capture of the city by the Turks, St Sophia was turned into a mosque, and of his draw of the court of the christian on an early churches that of the same fact of these that of the charges and Bacchus may be named as an interesting carly Byzantine monument. From St Sophia many other mesques were imitated, and it may be said to inaugurate a fresh type of architecture for these buildings. The greatest of the imitations

is the mosque of Solyman the Magnificent, | of which the effect has been said to be more imposing than that of the original. Of the two hundred or more mosques scattered throughout the city those of Achinet, Bajazet, and Mohammed II. may be men-An important monument of the tioned. An important monument of the anct, city is furnished by the remains of the Hippodrome, the centre of the Rom. life of the tn. Here are to be found the obelisk of Thothmes III., brought from On in the reign of Theodosius, and the winds triple screents column, once in the Temple of Delphi and brought to I. by Constan-In 1153 the conquering Sultan threw his mace at the three talisman serpents in the Hippodrome, which were supposed to protect I. against serpents, and broke the lower jaw of one, but refrained from doing further damage when he learned that the city would probably be dovastated by an invasion of serpents it its protectors were destroyed. The pub-reports upon the excavations in and new the Hippodrome are making Byzautine I. more real to us. The chief Molsamuedan antiquity is the Old Seraglio, occupying the whole S.E. corner of the city. If originally formed the private domain of the chief of the the Hippodrone are making Byzautine 1. div. forms to some extent a separate commore real to us. The chief Mohammedan ununity, and the city divides itself into antiquity is the Old Seraglio, occupying the whole S.E. corner of the city. If 1922, the office of Sultan of Turkey was originally formed the private domain of the sultan, and from ne name of its chief entrance, Babi Humayun, the 'Sublime Porte,' has come the official name by which the Turkish gov. used to be recognised, conquering Sultan had entered it. On the base specially courted and propud 10 of 20 1923. Kernel Packa was elected the Turkish gov. used to be recognised. It has three spacious courts, and around them are arranged the anct. buildings, one the church of st. Irene, and one the old treasury, still containing vestments and arms of fremendous value. The question of education has received much attention during the last half century, and much progress has been made, though the teaching estabs, are very largely of foreign institution and manage-Amer. and Fr. colleges led the way in modern education, though one of the large Gk. schools dates from the Middle Ages. Both Gks. and Armenians now have excellent educational facilities. The Turkish Gov. has also made great im-provements, and in 1867 a school for higher education was instituted by Sultan Abdul-Hamid. This work was carried further in 1909, whom a univ., granting degrees in theology, arts, science, etc., was also opened. The univ. of 1, was completely reorganised in 1933. From the beginning there have been schools connected with the mosques, where demen-tary subjects and theology were taught it is in the bazaars that the oriental spirit is strongest. These are arranged in now there is a fire-neutring organisation, rows, well-furnished with most kinds of the 330 L was creeted by Constantine the wares, but without any particular archi-tectural features. The city is well forti-fled, the main lines of fortification having been constructed since the Russian war in 1878. It is now easily accessible by rail, and there is good communication with the rest of the continent. It is connected with the central European railway system via Belgrade and Sofu. Exports ar-chiefly coreals, carpets, silk, wool, hides, and all kinds of refuse and waste materialsuch as horns, hoofs, skins, bones, old iron, etc. Sev. hundreds of tons of the sweetmeat known as 'Turkish delight'

are also sent yearly to the rest of Europe The manufs. of I. have all and America. and America. The manus, or 1. have an taken their rise during comparatively recent times, and only that of clothmaking has made any headway. During the years 1899 and 1900, handsome new quays were built on both sides of the Galden Norm thus making an availant Golden Horn, thus making an excellent harbour. Ships of the largest class find safe anchorage here, and there are fine graving and dry-docks. It was the centre of the Mohammedan faith throughout the world, being the seat of the Caliph until the other was abolished on March 2, 1924. The climate of the city is generally healthy, but it is very damp, and liable to great and sudden changes of temp. city was originally very unhealthy through medicient sanitation, but this is now im-proved somewhat. There are electric tianis in I. and its suburbs, and in Izmir. The pop, is varied, presenting a most remarkable mixture of races, nationalities, fuths, languages, and co-tumes. Each div. forms to some extent a separate com-Oct. 29, 1923, Kemal Pasha was elected first President of the Turkish Republic. I had endured numerous air attacks during the First World War, and had been occupied by Great Britain, France. been occupied by Great Britain, France, and Italy for he years; it was evacuated by them on Oct. 1923. A little later it was crowded by 30,000 destitute Turkish and 65,000 Russian refugees. According to the census of 1927, the pop. was 673,029, of which Stamboul contained 261,504. Pera 286,970 and Scutari 121,555. Pop. (1945) 845,000. L. is governed by a prefect assisted by a nominated council of tyroty-four. It has now nated council of twenty-four. It has now ceased to be the commercial centre of the cased to be the commercial critte of the Near East and the citadel of Islam and the capital of E. Christanity I. has often been devastated by fire from the year 100 onward. In 476 the public library, which is said to be a contained 120,000 vols., was destroyed. In 1696, 10,000 houses were buint in consequence of the illuminations for the birth of the sections can be 1911 seen thousand. Sultan's son. In 1911 sev. thousand louses were burnt, and many more in 1912, 1916, 1917, 1919, 1921, and 1922. But now there is a fire-natiting organisation. treat on the site of the anet. Byzantium, which dated from the seventh century R.c. For seven centuries it remained as the cap, of the Rom, Empire in the E. As 'New Rome,' it was early important, and on the partition of the empire in 395, it became the seat of the E. emperors. Even before this time the new city had had to withstand assault, for in v.D. 378, after the defeat of Valens, the Goths had attacked it. Henceforth it was to do so on many occasions. Twice, in 616 and 626, it sustained onslaughts from the Persians, and twice again, in 668-75 and 717,

the Araba furiously but unsuccessfully attacked it In 1203, and again in 1204, it was taken by the Crusaders whose con duct on that occasion is one of their chief duct on that occasion is one of their chief disgraces. From 1396, 1401 it was un successfully besieged by the lurks under sultan Rajaret. Sult in Murad II attack ed it once again in 1422 and it held out with the greatest difficults. The end was near, and in 1433 after a long and heroic defence against great odds, the city of constantine fell. See BATKAN WAI and FIRKEL See G. J. Grelot. A 1 atches to constantingly. FURKER See G J Greiot A latte logage to Constantinople (trans by Philips, 1683). C du I Du (ange, Constantino) lis Christiana (new ed 182) and His are de Constantinople sous les impereurs français, 1826 W I Brodribb und W Besant Constantinople 1879 Pears, the Fall of Constantinople 1885, The Destruction of the Greek I impire 1905 and I orty I cars 1916 W R Lethaby and H Swinson Chuich of Sant Sophia 1894 F A Closvenor Constantinople 189 R P 15 Daves, the Itan and his Subjects 1897 W H Hutton (on stantinople 1900 W Millet The Ottoman Impire and its Successors, 1927 Sil Heuke, in I a trin Chequerboard, 1934 and The Valinia of Widern Lurley 1936 (Stewert, 1 antine Lejac 1 148 Istankout, 2 e Cos

Istankeur, see Os Istankeur, see Os Istankeur, see Os Istankeur Games, were held it Corinth and were originally a festival commen rating Melicerti who after being hurled into the sea was hanged into a deity Then cele bration dates bak to 1340 Bc but for some years they lip ed and when Theseus re instituted them he dil so in honour of Poscidon 1 Her they were held every five years and became peaced that they were not omitted even when Mummius had rized the proud city to the ground (146 BC). Huge clowds gith iell from the is and Asia Minor as well is Gree e proper to witness conte to of every description, and the most coveted prize was a pine leaf

garlind or a pir-ley wieath
Isthmus ((ik ισθμις neck) term used in goog iphy to describe a narrow neck of in goog that to describe a narrow need of land joining two largers; it is otherwise separated by water. Thus the Lof Suez links together Asia and Africa at the head of the Releast that of Lamma councets. And Schonera, and that of Corinth the Pelopoin essis with N. Greece.

Istip, to in what was four erly I uropean Juricy new included in Serbis. Yugo slavic on the Bregninits. The inhab chicity Serbians, number about 20,000, and we engaged in agriculture

Istres, the in the dept of Bonches du Rhom I runes on the whore of Etang de Berre is 22 m / W of Wu sellies it las important sell and sod a Lop 7000 work.

works 1 op 7000

Istria Dora d', see Gilika Hillian of the distriction of the standard of the suffering of 1908 of the distriction of the standard of the suffering of the slaghtly flexible, a bar of it when supposed is very rocky and broken by many borded at its ends, sags visibly but recommended to the standard of the sand grains and the rest its. The chief industrics are

fishing, salt retrieving, and shipbuilding Olive oil and wine are manufactured, fiuts are cultivated wheat maize 1ye and oats grown, and eattle bred in large numbers. The local diet meets at Porce (1 arcnzo) (12,355) but larger this are



Yugosliv I mla CIRLS OF ISTRIA

Puh 11) and (astagno (Konstanuca) 1 or timeschanging hands I come Λtt unlithe dominion of Autily in 1813 betworthe two World Wilsy wis part of Ital and since 134 has been 1 into Yus livin 1 op 403 000

Iswai Ishwar) Chandra (Vidyasagar) (15 1 11) ludiin author ant so ad ic fore r belonged to a Kulin Brahman famil of Bengal One of the finest and th t then and beauty of his linguage in the least of the line and beauty of his linguage in the least of the line and line an I de of Sita (1862) Soon after 1851 me prin of the Sinslant College of h 1 Cil utti The Act of 18 6 permitting the recurrence of Hindu widows wis largly the outcome of hi exertions

Isyllus, (k poet who not occurs in an inscription in the temple of Aschmus in Litturus Prof. ibly lived at the time տելոհաստ of the Gk invision of Sputh after Chaci mea

Itacontiara, to in I ravil at the mouth of the Muden's a trib of the Amazon has a throng cousting tride in the products

which form the rock not being firmly tures. comented together. In England, beds of to the tlexible sandstone are found associated with the magnesian limestone of Durham. Brazilian I. occasionally contains crystals

of diamoud.

Itagaki, Taisüke, Count (1837-1919),
Jap. statesman, was prominent in the
progressive movement which led to the overthrow of a feudalism long since antiquated. At Tosa he opened a school (the Risshisha') where he taught his advanced and enlightened political views. The party of patriots, 'Aikoku Kö-tö,' The party of patriots, 'Aikoku Kö-tö,' acknowledged him as their leader, and he directed the policy of the 'Jigūto,' whose watchwords were 'liberty' and 'reform,' 1881-1900.

Itajahy, riv. in Brazil, flows through Santa Catherina, and enters the Atlantic Ocean at Itajahy, a small port for the

Ger. colony of Blumenau.

Italian Art, in the dawn of Christian art in the fourth century a common style was sought in architecture, sculpture and painting, so as to give a common expres-sion to the new religious ideas. The hist. of the development of Gothic architecture in Italy establishes very clearly the gradual transition from here ideas to Romanesque and Byzantine and ultimately to Gothic. Earlier Gothic architecture in Italy never achieved the striking effects it achieved in other European countries owing to the constant influence of classical traditions and, in lesser degree, to the in-fluence of Gk., Arab, and Moorish work. The earliest buildings used for Christian worship in Italy were not more adapted for such worship than for pagan rites. The form of architecture used was the Rom, art of the times, and to a large extent Rom. buildings, and particularly basilieas, were converted from the time of Constantine into Christian churches and anct. monuments were despoiled to provide the material for the Christian provide the material for the Christian basilicas, mansoleums, and baptisteries, and even for the Arch of Constantine. The church of San Vitale, Ravenna, affords clear evidence of the way in which the constructional arrangements of pagan Rome were copied and utilised by the Christians. At the end of the sixth contury and during the seventh, decoration in Rome assumes the Byzantine style even in colouring a in the beststyle even in colouring, e.g. in the basi-lica of the Apostles or in the mosaic of S. Vitale, Ravenna. In the Carolingian period of the ninth century the conflict between indigenous and foreign influences is interrupted by an attempt to return to the classical antique; but it is impossible to estimate the cultural movement of the tine art continued to spread westward and litteenth century and finds a master in llyzantine livery earling and sacred leons the L. tradition and indicates the art of and goldsmiths' work supplied models for all Europe from the tenth to the twelfth centuries,—a wealth of splendour which extant in St. Mark's at the contribution of the contributi

In what is called the second golden age, from the ninth to the eleventh centuries, Italy was enriched with Byzantine struc-

tures. Some of the best still contribute to the beauty of Venice and Sicily. The Gk. orlent had its influence on painting up to the close of the thirteenth century, though not on architecture or sculpture for since the eleventh century a new art had appeared, known as Romancsque, though some think it should more appropriately be called It. for one of its strongest characteristics was a harking back to old classical Rom. memories in the decora-



THE FIVE DOMES OF ST. MARK'S, VENICE

tion of cathedrals. Modern art, Adolfo Venturi, had its beginnings in the Romanesque cathedral with its subordination of most elements to light effects, its doorways adorned with rare magnificence. Romanesque art in sculpture may be exemplified in the statuary of Antelami at Parma and Milan. In Tuscan, a whole line of architects in marble seems to have inherited a classical conception of design inherited a classical conception of design and to have maintained its integrity throughout the century, e.g. in the Bap-tistery at Florence and the cathedral of Ficsole. In the early thirteenth century (tothic designs were beginning to appear in Italy. This is shown in the construc-tion in 1216 of the classic norch of Serm Italy. This is shewn in the construc-tion in 1216 of the classic perch of San Lorenzo and in 1210 that of Civita Castel-Yet at the same time the Cosmati lana. still adhered to the horizontal in preference to the vertical and to the rounded arch, and it is from the Cosmati that the Umbrian architects trace their artistic

the sculpture of Italy was decidedly in-ferior to that of more N. countries and much of it was actually the work of N.

sculptors. Pisani and later artists, the early figures are purely secondary to the architecture they are intended to decorate and they they are intended to decorate and they are the work of men who were primarily architects. But after the end of the thirteenth century the reverse was more often the case—as is exemplified by the sculptured decorations at the W. end of Orylete cathedral. During the thirteenth century Rome and the central provs. of the produced were few sculptures. century Rome and the central provs. of Italy produced very few sculptors of ability, almost the only notable men being the Cosmati already mentioned. But during the fourteenth century Florence and neighbouring cities were the chief centres of it, sculpture and in the succeeding century Florence had become the asthetic cap, of the world, having attained a pitch of artistic wealth and perfection rivalled only by that of anct. Athens, and indeed there is some similarity between Florentine plastic art of this period and

that of fourth or fifth century Athens. Niccolo d'Apulia's statuary is reminiscent of the mighty constructions of anct. Etruria and Rome and marks a break-away from Homanesque art. It heralds the reform in sculpture continued by Giovanni Pisano, in whose hands the repre-sentation of the human figure attains a completeness which It. painting could not acquire till a century later. In Niccolo's baptistery at Pisa sculpture is sub-ordinated to architectural framework, but in the pulpit at Siena, made by him in collaboration with Giovanni Pisano, the sculptural effect is richer and more varied. In the fountain at Perugia, the finest flower of Giovanni's brilliant imagination, the influence of Niccolo has all but vanthe influence of Siccoto has an our vanished and 'grave tranquility has yielded to excited rhythm' and these qualities are to be found in the fellowers of Glovanni Pisano—Glotto, Andrea Pisano, Orcagna, who was famed as a goldsmith and painter as well as a sculptor, and Nino Pisano sculptors of the thirteenth and fourteenth centuries. Another of the most inspired creations of Glovanni Pisano is the 'Massacre of the Innocents' in one of the relicis of the Baptistery of Pisa. Well has it been said that this impassioned contemporary of Dante never created a greater or more dramatic work of art than these convulsed groups of mothers and children.' Andrea Pisano, originally an obscure goldsmith, became famous for his bronze bas-rellefs in the Florentine Baptistery. In it he shows a mastery of the representation of movement and a regard for the unity and inter-relationship of the varied seems of a story which introduce a fundamental re-form in composition in which he was forestalled only by Giotto in his paintings. The later half of the trecento also exhibits a nascent tendency towards reality, a tendency exemplified amongst the Veronese sculptors and particularly in the Venetian-, Jacobello and Pier Paolo delle

Unlike the sculpture of the Florentine art. Cavallini was the herald of the stil nuovo in It. painting and it was he who inspired Giotto. He was a master of the 'Roman School' and the greatest exponent of the classical style at the end of the thirteenth century. Some of his finest work is to be seen in the messages of santa Maria in Trastevere, Rome, notably in the panel of the 'Birth of the Virgin' and in his fre-coes in the convent of Santa Cecilia, Rome. Glotto, who with Duccio di Buomisegna was a pioneer in liberating the arts from the rigid medieval tradition, reveals the profound tranquillity, the dignity of the spirit of this first renaissance of poetry and painting. His figures, far from imitating the silhouettes of contemporary sculpture, recall the massive simplicity of primitive monuments and their simplicity is enhanced by a corres-ponding simplicity of scenic background. His greatest paintings were destroyed, but in the Scrovegm chapel his trescoes reveal his power of capturing life, his sense of human character, and his keen dramatic instruct. Climbue the Florentine con-tinues the Romanesque tradition as may bo seen in his work in the Unizi gallery. Florence, and the frescoes at Assisi. Other names of the fourteenth century are those of Simone Martini, an artist with a rare sense of beauty of line, of colour, of graceful movement, and of human expression, Lippo Memmi and Ambroglio and Pletro Lorenzetti of the 'Sienese School,' a 'sort of a sthetic Lotus-land of painters,'

Quattrocento or influenth century It, architecture is glorified by the gonius of Brun lleschi, the inventor of architectural perspective. The exteriors of his buildings preserve medieval eastle features but the internal decoration is inspired by classical art. The church of Santa Croco in Florence and the cathedral there exhibit his work at its best. His follower Leon Battista Alberti, nevertheless gives the exterior a significance of style of its own. In Brunelleschi's art there is a light Florentine elegance in the airy arcades and friezes of cherubin; in that of Alberti is shewn a premiercom.

love of the romantie. Of the quattrocento
was Francesco di Giorgio Martim who
was Francesco di Gubbio. The Lombard shewn a predilection for the massive, a love of the romantic. Of the quattrocento Gothic style of architecture of the fif-teenth century is illustrated by the Ca' d'Oro Palaco at Venice and the Doge's Palace. The Arco Foscari in the latter is the work of the sculptor Antonio Rizzo. Amadeo, in Milan, renounced the Gothic style, yet carried its flowery decoration into the Renaissance, as is shown in the into the Renaissance, as is shown in the facade of the Colleoni chapel at Bergamo. The lofty spirit pervading the work of the Urbino artist, Donato Bramante, is exemplified in the church of San Satiro, Milan and in the Trividzio chapel, San Nazaro, in the same city.

The Cothic style characterises the work of many it artists at the beginning of the

of many it. artists at the beginning of the Wenetians, Jacobello and Pier Paolo delle fifteenth century. A mong them may be masegne.

Great names in painting in the trecentor are those of Pietro Cavallino, Giotto, and Cimabue, the last-named, as Dante not a great artist, but he inherited much records, being the first famous name in of the Siena School's feeling for beauty of person, of line, and of colour, enhanced by a lively fancy which filled his compositions with jewels and flowers, rich brocades and gentle laughing faces so representative of the court art of his time. Antonio Pisano (Pisanello) is, however, the greatest painter of this artistic movement, but he displays a child-like pleasure in the minute presen-tation of natural objects. Other painters of this century were Fra Angelico, Musaccio, Paolo I ccello, Andrea del Castagno, Piero della Francesca, Melozzo da Forli, Luca Signorelli, Antonio Pollajuolo, Andrea Verrocchio, Filippo Lippi, Domenico Ghirlandaio, Giovanni di Paolo, Pinturicchio, Perngino, Bottwelli Mantegna, Cosimo Tura a pioneer of the Ferrarese School- C. Crivelli, Francesco del Cossa also of the Ferrarese School Borgognone. Bramantino, Ercole de' Roberti, Antonello da Messina, Cima da Conegliano, Giovanni Bellini, Gentile Bellini, and Carpaccio. These are the masters of those great artists who were to invest the succeeding century with the full splendour of it, art thus Leonardo da Vinci derives descent from Verrocchio who perfected the art of shading figures and endowing them with spiritual refinement: Raphael derives from Perugno and 1 20 della Francesca; from Perugnio and 1 an della Francesca; best work he 'uses line with a sense of Michelangelo from Bactoolo and Signor-elli, both, especially the latter, remarkable a living thing? (Holmes). Leonardo da for energy and vigour in their treatment (via) also had this quality but is inclined of the human name and their reaction it confine it with selentine considerations, from impressiveness: Correggio (Allegri) whereas Botticelli uses rhythms for the from Manteana, the founder of human-latte pointing in N. Italy, and Costa; brated allegories 'Primavera' and 'The Giorgione and Titian from Giovanni Burth of Venus' exhibit these qualities Bellim, whose laces are invested with the in their highest degree. Manteana seeks clear light of innate goodness and calm, the glanuour of anet. Rome in statues and clear light of innate goodness and calm. Fra Angelico's supreme quality is that of colour, and no other painter of the time employed tones of such pullty. He has been described as 'the chief prophet in Italy of the beauty of holine-s. designs are always exquisite and some-times, as in the Florentine frescoes. The Transfiguration, and The Marys at the Sepulchre,' they attain extraordinary Masaceto, who died premagrandeur. turely, assimilated scientific principles with the same natural ease with which he and the same natural east with which he mustered the general construction and appearance of the human figure. In his fiesco 'The Tribute Money' there is a mt. range which, in Ruskin's judgment, was the first piece of real mt. drawing in anct, art. L'eccilo was a great craftsman but he combined science with art to such an extent that it seemed to Vasari the art was overbalanced. Grandour characterlees the few surviving works of Andrea dal Castagno as may be seen in the small Grueffixlon in the Brit. National Gallery. Of the Florentines of the affreenth century Fra Filippo Lippi is noted for his gift of colour in the grand manner. traiture assumes a more prominent place with Chirlandaio, a pupil of Baldovinetti. Perugino, like Pinturicchio, has an eye tor undulating airy distances which seem to unduating any distribution of the property of

oid and new generations. His sense of specious design was unrivalled by his contemporaries and make him a greater pioneer of landscape than Perugino. As pioneer of landscape than Perigino. As a portrait painter he has no contemporary superior. In 'Baptism' and 'Nativity' the National Gallery has two of his best panel paintings. Signorelli was one of the most original masters of his time, whose energy found its outlet in the robust whose energy found its outlet in the robust treatment of the nude, which he handled with a solid power only surpassed by Machelmagelo binself. Antonio Pollai-uolo made a close study of artistic ana-tonu, as may be seen in the 'Martyrdom of S. sebastrur' in London. His 'Apollo and Paphne,' also in the National Gallery, nuoves him an admirable artist. Verroeproves him an admirable artist. chio's name sarvives chiefly as a sculptor, though he was also a musician and goldsmith as well as painter, but we are never certain how far paintings ascribed to him are wholly his work and not sometimes the work of his great pupil Leonardo da Vinci. Botticelli, the great actist of lineal design is world famous for the languorous poetic beauty of his feminine types, but beneath this beauty lies a vigorous artistic energy. In all his best work he 'uses line with a sense of the glamour of anet. Rome in statues and rehels and most of his paintings have been described as a kind of coloured sculpture in the flat.' Typical examples are 'Trumph of Sciplo' and 'Samson and Deldah 'm the National Gallery, Material splendoms are apparent in the work of Carlo Crivelli, many of whose paintings are in the National Gallery, Giovanni Bellim shows a wonderful and teader sympathy between man and nature, allied, however, to great artistic powers. Within however, to great artistic powers. Within the range of his devotional studies he shows so remarkable a variety of design, notion and shows so remarkable a valuely of using the there is a los example dominated Venice for a judgment, drawing in translueent colour effects are the peculiar t craftsman glery of the Venetian school. In Carglery of the Venetian school. In Car-paccio of the same school the Venetian delight in pageantry tound its most complete expression.

Pra's dominance in sculpture ended

with the fourteenth century and as we have seen passed to Florence. The moment of transition from Gothic to The Renaissance art can be studied in the work of Lorenzo Chiberti, who vanquished Bunelleschi in the competition in 1402 for the decoration of the second door of the Florentine Baptistery. Jacopo della Quercia of Siena, a near contemporary of Chiberti, is a holder innovator in his love for strong relief and vigour of subject. The last traces of the Gothic tradition of Bernard.' Ploro della Francesca, a Flor-sculpture are abolished by Donatello who entine by choice, is the link between the for half a century imposes his own art on Italy as a national art. His equestian statue of the (attauncinta at Padua is one of the noblect in the world and only rivalled by the statue of Colleoni at Venne by Verrocchio and Leopardi. In has relief he creates almost impressionistic effects of Bacchie movement. He has no rival in representing the ebb and flow of a crowd. Other sculptors of this century include Luca della Robbia, a maker of statuettes in luseany. Desiders da Settignano with a faulty for carving graceful articocatic figures. Francesco di Gorgio. Viatim. who was architect painter and sculpter and three Horen time artists, Bertaldo. Antonno del Polabido and Andrea Verrocchio (already mentioned as punters) who almost outdo Donatello in attacking the problem of vital movement the passion of the Hor

entine honaissance In the sixteenth century Rome became the artistic cap of Italy Painters, sculp tors and architects flocked there, and on their departure spield the new gospel throughout Italy and a national artistic style developed in the name of Rome Architects as students of Rom classicism endowed their buildings with an imposing monumental aspect ind a thythm of regular proportions the leader of this school of artistic thought was 100 nto Bramante the architect of the Belveder. at Rome and of the sturcase of the Vati can but the unity of the monumental and the harmonius is the work of Michiangulo and of Cultinno and Antonio Singallo Great (xamilia) of Michiangelo work in architecture are to be seen in the Sagresti Nuova of San I orenzo at Florence and in the magnificent dome of St Peters and Rome Other architects of this period are Jacopo Tatti (Sansovino), Andrea I alladio of Venice and Vignola, the architect of the Palazzo I arnese In sixteenth century sculpture Michelangelo dominates the field He raised the sculpture of the modern worl i to its zenith of glory set at the same time he sowed the seeds of a rapidly approach ing decline for his initiators—such as Baccio Bandinclli Giacomo della Porta Ammanati and others copied and exaggerated his faults without the saving grace of a scintilla of his genius. The aggrated in a fault without the saving grace of a scintilla of his genius. The Lapiths and Centuars and two figures of Slaves in the Louvre may be mentioned as examples of Michelingthe's power of dynamic expression the u.h. the nude dynamic expression on the man human figure Subtlety and refinement inform his spiendid lieta group of figures in St. Peter's As a sculptor Benvenuto (cllini strives after size, but with him as with Sansovino and Alos sandro Vittoria the art of Michelangelo is

whose bronge statue of 'Mercury' in the lills is a triumph of movement while mother of his works is the great fountain at Bologna

In N Italy in the fourteenth to six teenth centuries term cotta was adapted to the moet claborate architectural purposes. It has the W façade of the cathedral at Monza, the cathedral of teena, and S Maria delle Grazie in Milan are striking examples of the splendid effects obtainable by terms cotta work. But the most important application of terms cotta in me livial Italy was to statuary—relifes, busts and groups of life sized figures of the litteenth and state in the enturier some of the Itoentine terms cotta sculpture of long in the system of Itoentine terms in the succentral country were produced by Caridos a (unbropio loppa) for S Sutno at Ulian and by Gaudo Mazzoni for churches in Modena



LEONARDO S 'GIOCONDA'

with him as with Sansovino and Ales sandro Vittoria the art of Vichelangelo is reduced to a sobriety that yet is not devoid of grace. The tomb of Giovanni Galeazzo Visconta, completed e 1560, is a sumptuous example of the style of the Renaissance grown fiably from excess of richness and through abandonment of the simple purity of lifteenth century art. The sixteenth century indeed was one of transition to the state of degradation, yet it produced many sculptors of high ability, such as Giovanni da Bologna.

The sixteenth century in It painting was rendered glorious by a constellation of supreme artists whose names are headed by those of Leonardo da Vinci, Michelangelo, and Raphael, and include Titian Giorgione, Allegri (Correggio), Veronce (Caliari), Sebastiano del Plombio, Jacopo Tintoretto, Gambattista Moroni and Caravaggio It is true discussioned that his influence was so extraordinary that it is ability, such as Giovanni da Bologna.

without mentioning his name.' His interpretation of chiaroscuro and his solution of the problems of form and movement proclaim the scientific vi-lonary looking into the heart of nature. Yet the Yet the dominion of sixteenth century art properly belongs to Michelangelo, the artist of the prologue of the hist, of man in the Sistine Chapel, rather than to Leonardo. The masterly power of his art can be comprehended only by long study, the study of all that the progressive Florentine artists had been striving to achieve since the time of Masacelo but was attained only by Michelangelo. Like the great (ik. artists before him he seized on the nucle as the best medium for revealing the highest asthetic perfection: but, while Titian and Correggio sought this perfection in the sensions, Michelangelo sought it triumphantly in physical force. Power and in-tellect are the qualities that mark his art, a profound knowledge of nature and careful study of the living model, yet no servile copying even of nature, for he often violates rules of proportion and, in other ways, rejects the lessons of science if that is necessary for the expression of his idea. For he was, perhaps, the greatest of idealists; his figures live by virtue of the life he infused has them and remain the grandest creations of Italian art' (Bryan). Raphael embodies the highest aspirations and finest culture of the Re-naissance. He made a study of the fre-coes of Masaccio and the reliefs of Doma-tello and of Michelangelo's sculpture and the work of Mantegna, and, next to Michelangelo, he was the most representa-Vatican are remarkable for a solemn grandeur of composition, wonderful portraiture, and great depth and richness of colour. Harmoulous rhythm is, for Raphael, beauty itself as it is for Alberti. His tranquil art reflects the cultivated urbane society in which he moved and he urbane society in which he moved and he ture and sculpture of the seventeenth had his triumphs, triumphs so real that century are dominated by the innovator even Michelangelo felt uncasiness at his Loranzo Bernini. The Fountain of the growing fame and, it is said, availed him Four Rivers in Rome and the nonument self of the powers of Sebastiano 'del Plombio' as a colourist for his own de-signs for a Picta group at Viterbo in order to outrival him. Titian, who was a pupil of Glorgione, reaches the heights of sensuous beauty and as a colourist is unrivalled; but spiritual beauty is often wanting; he was a realist and, as Ruskin says, no ascotic. He tried like the Gk. artists to express the joic de rirre of human kind, and no pointer was ever more brilliantly successful in the effort. His women's portraits have a rare charm and as a portrait painter he is admitted to be of the front rank. One of his most famous portraits is ' Homme au Gant '(in the Louvre) In this craft he undoubtedly influenced Velasquez. Classical myths and romanticidylls were the stuff of Glorgione's genius. rayus were the stuff of Glorgione's genius. Seventeenth century Bolognese painting finds its chief representatives in the Fanous among the last named are Caracci—who founded the School of the Sacred and Profane Love in the Borg Eelecties at Bolognes—Barbieri (called hese Gallery, 'The Three Ages of Man' in the Bridgewater Gallery, and 'Noli me Tangere' in London. He delights in pletorial visions without any concrete Landscape, with Glorgione, because of Mattia Preti, Salvator Possible and Caracciolo, Mattia Preti, Salvator Possible and Caracciolo, Mattia Preti, Salvator Possible and Profance of Caracciolo, Mattia Preti, Salvator Possible and Profance of Caracciolo, Mattia Preti, Salvator Possible and Profance of Caracciolo, Mattia Preti, Salvator Possible of Caraccio

comes the main subject of the picture and figures belong to the landscape, not the landscape to the figures (Bryan). In his later works he approaches nearer the classical (ik. than does any other master classical (ik. than does any other master of the Remaissance, while yet revealing a note of yearning that was alien to the Gk. conception. His celebrated Bacchanal Bacchans and Arladne,' in the National Gallery, is one of the supreme masterpiers of all time. Callari (Veronese), as may be seen from his famous 'Marriage at Cana', in the Learner delicity in the group. Cana' in the Louvre, delights in the gorgrous in style and conception. Pomp and geous in style and conception. Pomp and sple adour of earthly pageantry, the value glory of humankind, are manifestly the most obvious features of his typical banqueting scenes. Tintoretto's fame, apart from his power of portraiture, rests upon his vast imaginative compositions, with the character of which Ruskin has familianted us. His Christ before Pilate is both massive and dramatic. Caragogical both massive and dramatic. Caravaggio led the reaction from the Eclectics—a naturalistic reaction from conventionalism and academic idealism analogous to the revolt in France under Manet and Courbet. Typical of Curavaggio's style are 'Tho Death of the Virgin' in the Louvre and the 'Flight into Egypt' in the Doria Gallery, Rome. His new movement, Gallery, Rome. His new movement, says or Charles Holmes, was of such importance to the arts that its effects have portance to the arts that its effects have endured to our own day. Notable painters of the Ferrare-e school were Francesco Bianchi (Giovanni di Niccolo Luteri), Dosso and Battista Dossi, and Buvenuto Tisi (called Garofalo). Garofalo was strongly influenced by Raphael and by Dosso Dossi. His religious compositions, if monotonous and wearisma. positions, if monotonous and wearisome, are of high technical quality and his classical myths are somewhat too conventional, but his 'Mars and Venus' (Dresden Gallery) has charm.

l'ost-Renaissance baroque It, architecof t rban VIII. are examples of his sculpture. His daring innovations in the churches, his sumptuous palaces and monuments of marble, bronze, and gold, lent the Eternal City a new-found mag-nificence. An equally hold innovator of this century was Borrommi who first introduced contorted spandrels and hollow mouldings. In his lavish use of arabesques and colours he is as far removed from the classical tradition as is Bernini with his love of light effects on gold and coloured marbles. Valvassori's splendid coloured marbles. Valvassori's splendid. Doria Palace is an illustration of the new rococo stylo. Other architects and sculptors of the time are Pietro de Cortona, Maderno, and Rainaldi.

Giordano, and Cavallino Bernado Strozzi today 'All three belong to the Realist is amongst the best portant painters of school the time Gian Battista Liepolo in the cighteenth continy is noted for his transparent atmospheric checks. In concep tion he derives from his contemporary Prazetta his power of invention and decor riazetta his power of invention and decor ation as revealed in the tre-cors of Antony and Chopatra in the islazed fabra Venico Also of the eighteenth century is Canaletto (Anton) Cinale the painter of the Venetian canals and camps. Nine teenthe century if architecture, so ultifure and painting and their leading exponent in Antonio Cinovi one of whose master pieces the Ganganelli sepulchie some seese (anova gave renewed life to the art of it sculpture restoring it to that stundied from which it had deteriorated when the instinct for classical be inty and austerity of titanic invention and well night superhuman energy as embodied in the superlative genius of Michelangelo had yielded to the evuberant manners may of the seventeenth and eighteenth centuries. Other names of the century are those of Sabatelli Domenico Morelli, and Glovium segantial, crists of the impressionist school. austerity of titanic invention and well

Larly in the twentieth century It artists made a noteworthy contribution to the Futurest movement. Its foremost ad huturist movement is socialist as pounded its cred in his lifeliae e irle kuturiste, but he sought to go beyond Futuriste, but he sought to go beyond Futurism and to rec rei not only a set of visual futs from a new angle but also came marest to achieving this ambition in a remarkable series of thee; I unting Leave faking Those going \widetilde{w} is 'and Those who temain behind The Veta physical school was short lived. Its aims

were set forth by (iro (ura in Piltura Melajesica and its principal exponents were Modighani and dichine Donglas copper has detected the curse of their failure in their mability to lical entirely with naturalism and to fine the wondrous quality of their poetic visions from its natural form They was sught in a ready made fabric

The next outstanding figure is Giorgio Morandi (6 1890) Theigh at first in fluenced by the Metaphy i 11 maters, he has remained aloof from ill in ivements He is con cryative without hing re wition arv a inc technican who work how ever locks movement ni (niploys subdue) olouring to casts his pre dominant sulness. The dominant person definition of the Rome had is concorned not with philosophi at theories but with human experience in its own day Guttus fiere realism is h t seen in four we's painted in 11st The Mechan 'The Washerworin 'The Campstroses' and 'the Witer Melon Stall In sculpture the three in set inter esting beure are Manzu, who (ardmal the Sollian Pietro Consagra, and Malino Marini, who has been described as 'probably the best young sculptor in Europe

school

behood

Domage to Italian art in the Second

Herld War—The most scrious losses in

Italy 5 of Bologna were Bonevento
Cathedral Santa Chains and the univ

bluty at Naples the Campo Santo of

Isa the binks of the Arno at Horner
the Limpio Malitestiano (see Alitatis) at Rumin and the Benedictine monastery
of Monte (1810). On the Coult with of Monte Cr sino On the credit side could be placed the immunity of Rome, size to the church of san I renzo and the great luscan and Umbrish cities, and also I wenn't and Cibino Tubic ex-lubtions organised under Anglo American anymer of paintings and other works of art in I lorence Sien't Rome and else where in orded evidence of the cure taken hy their custodians to sateguard them which the dot war-wept over Hathere is that tad of war-wept over Hathere is that the battle line (Michael Hathere) is the battle line of the battle line is the battle line of the battle line is the battle line in the battle line (Michael Hattle line) is the battle line (Michael Hattle line) in the battle line (Michael Hattle line) is the battle line (Michael Hattle line) in the battle line (Michael Hattl the Alliedarmies fighting an unst the grain of a most difficult country and the zeal of the offl ers of the sub commission for M numents. I me. Arts and Archives we thing in their wake, made it possible to save the greater port of it sly a unique art in wealth in stack was the chief cause of dames; in 1 N or Bologua circ to inc was taken by the Eighth Arms (71) and RAI in edquarters to limit destruction otherwise the trage reckoning would have been heavier still But Pad it Vicinza verous Mantia and Bolzan vill suffered while Genox endured Bilan; ill suffered while (acnosendured the all itional afflit tion of I ombardment from the sea. One of the most gravious artist turil losses was that of two of the finest historical bridges in I—the Ponte Scala, ro built in 13)1 and the Ponte delly I ietra, cullest of surviving Rombridges both at Verons. These were bliwn up in spite of issurinces to the contrary on yeril 2—13), by the Resistence of the twenty chireches on the list. sixten of the twenty churches on the list of pretected monuments in Verona as well as most of the fine pulaces were dained 4t Vienza the extincted was surfield destroyed. At Padna the des t is of the kiemitanichurch involved the are stest individual disester to Italian or action conditional disister to Italian art official key or higher bord Committee or II rescreation and lastitution of II ris farter in I may Hands 1946—this of the wholes ries of free one by Unit and Authority of the church cf limeisco we almost completely de tract the old to of Bolzano dett el lin om bi ob bis indi aufi i dgreat h um not only to its indi vidu i monuments but to its genoral cha ter and itmosphere. At Genos cha ter and atmosphere At Genoa

> laches 1 outback, 3 cloisters, 129

pal and villes and 3 th atres—all of

artist importance—were more or less

dans, i the most scious less being the mugnitis of the medieval palice. At Bologna and Furin the change was less than naigh have been found and at Milan though there was widespread damage, this soldom amounted to complite destruction and Leonardo da Vincis fresco of The Last Supper'

survived in spite of the fact that the roof | fall of France, the Brit. forces, for lack of of the refectory and the wall opposite the recourses, human and material, were unpainting were destroyed. See also under the names of cities and the

See further underARCHITECTURE, PAINTING, and SCULPTURE and under the names of individual artists

See M. Bryan, Duttonary of Painters and Engravers, 1903. Selwyu Brinton, Correggio at Parmu, with a separate analysis of artists and their works in sculpture and painting (second ed.) 1907. sculpture and painting (second ed.) 1907. E. G. Gardner, The Paintirs of the School of Ferrara, 1911. A. V. V. Brown and W. Rankin, A Short History of Italian Painting, 1926. G. Vasari, Lives of the Paintire, Sculpturs, and Architects (Eng. transreprinted in Everynnan's Library, 1927). A. V. nturi, A Short History of Italian Art, 1926. Sir C. Holmes, An Introduction to Italian Painting, 1929. T. Borenius, Florentine Frences, 1930; F. Anial Florentine Painting and its Social Background, 948 ground, 948

Italian East Africa. The name given by Italy in 1936, after her conquest of Abysania, to the ters in it, occupation in E. Africa. They then comprised the former colonies of Entrea (a,v.) and it Somaliland (see Fight Land), and were divided into the prove, Eritrea, Amhara, Galla, Harar and Somalis, the cap, Addis Ababa, being a separate dust, not included Ababa, being a separate dist. not included in any prov The total area was 600,000 sq. m., and the pop, was estimated at 7,000,000 The whole of this colonial empire was lost in the second World War

in 1910-41.

Italian East Africa, Campaign in (1940-41). The conquest of it. E. Africa-Eritroa, it. Somaliland, and Abysinia, besides the recapture of Brit Somaliland was one of the most remarkable cam-paigns in the annals of African warfare The lessons of mechanised warfare had The besons of incommend warrance about taken to heart, great distances over difficult mountainous country were cover ed with spectroular case the coop ration of the R.A. F was effective to a degree, while the co-ordination of all the forces, operating from a dozen differ ent directions, pointed to a highly credit ent directions, pointed to a highly credit able staff organisation. Imperial force-comprising S. Africans, S. Rhodesians, Sudanese troops, the King's African Riffes, and The Royal Wafican frontlet Force together with Abyssinian patriot Force together with Advisible patient forces, all took pait and, in the denouement, following the conquest of Entres some three forces were all advaning at great speed on Addis Ababa whore the its, had hoped to hold out long enough for the rains to save them. Let for long, for the rains to save them. Not for long, not the least important function of the Brit, forces was themselves to play a similar rôle and to hold in check large it armies, while Gen Wavell's forces were advancing on Cyrenalca (see BATTLE OF THE WESTERN DESERY). This accomplished, all the forces were set in motion some advancing from the Sudan into Natherswip and in Abysinia and into Erites, other, north ovacuation became nevitable, others across Ogaden and to Harar, while others across Ogaden and to Harar, while others penctrated W. and S.W. Aftican and S. Rhodesian squadrons also Abyssinia. But at first, following the raided Mogadishu, cap. or it. Somaliland, Abyssinis and into Entres, other north ward from Kenya and into S. Abyssinia.

able to do more than hold frontier posts, yielding them only after stubborn resistance; while Brit. Somaliland had to be evacuated and it even secured to many somewnat doubtful whether the Brit. would ever be able to counter the main It. thrust against Alexandria and the Suez, the fall of which would have multiplied the difficulties of a campaign in Italia Africa beyond conjecture.

Aftica beyond conjecture.

The Its began operations by bombing Berbera, cap. of Brit. Somaliland, and by attaking Brit. Moyale just inside the Kenya border, and, crossing the Abyssinian-Sudanese frontier, occupied more Brit frontier posts. Early in July, S. Attican and S. Rhodesian airmen bombed It croditiones at Diredawa an important to on the railway from Addis Ababa to Dubbit in kr. Somahland, (which colony Dubuti in kr Somahland, (which colony was now under the orders of the Vichy Gov of unoccupied France and in no sense an ally of Britain), and Massawa, the chief port of Fritres. On Aug. 5 the Its, in-vaded Brit Somaliland from Abysinia moving on Odweins, Hargers, and Zeils. The colony was defended only by in bile motorised units of the Somaliland Camel Corps. Zeila was occupied without opcorps. Lena was orenthed without op-position. Hargelsa was taken by a force including tanks, artillers, and aircraft. The Brit delaying force fell back. Zeila, nuder the original plan was to have been defended by the Fr but, owing to their collapse, it was not advisable to send Brit. forces to take their place as they would have been isolated from the main garrison in Brit Somaliland, sman as the track on Aug 11 the Its. made a general attack on The Track of T positions covering Jugargan Pass. The Brit staff decided that it was impractio-able to defend Brit. Somalilard and more advantageous to make the enemy uso up advantageous to make the enemy uso up his supplies in what was, strategically, a wisternl enterprise—a policy which later proved institled. The its wert using two divs., complete with artillery and armoured fighting vehicles originally included to oppose the fit forces in Fr. condition. At this stage all the Brit. could do was to bomb It positions at Ingl, Macaca, and Desse in Entrea and Abysime, as well as harass the It. advance in Brit. Somalitand But the Brit. torces, although unremoreed, continued to tost with great determination of the way to Berbera. Ly nitually, however, the Brit, troops were evacuated from the colony all the guns, excepting two lost in the campaign, being tubarked and the stores dostroyed. The original disposi-tion had been has don the scheme of Angle-Fr. collaboration under which the flunk, the pivot of the whole position. The only sound course in the circumstances was to fight reargueri actions with the small force available and to unfirst the maximum losses on the enemy until

Anglo-Egyptian Sudan-which was in enemy occupation. Extensive raids were carried out a few days later by Brit, and S. African bombers on aerodromes at Neghelli, Jelib, Kismayu, and Mogadishu—notably on that of the last-named tn. All through the campaigns against the Its., whether in Cyrenaica or in E. Africa, the Brit. command adopted the sound course of bombing the enemy's planes on the ground or fighting them out of the skies so that, ultimately, when the Brit. turn came to advance, the Its. were hampered for lack of aircraft and of undamaged acrodromes and, indeed, the process of destruction of machines continued right through the campaign, Brit. losses in planes and pilots being relatively slight. There was now a luli in operations.

Numerically the enemy was in a formid-ably superior position. But he met stout Brit. resistance, and where by sheer weight of numbers and metal he forced a way through, it was only to encounter a dogged opponent, who contested literally every foot of ground. In the conditions in which the Brit. forces were placed by reason of the collapse of France a greater military nation than the It, would have captured Aden and Egypt. Their failure captured Aden and Egypt. Their failure to make any substantial progress anywhere in Africa while faced by forces negligible in numbers gave their opponents encouragement in a time of gloom.

Over two months later Mr. Anthony Eden, war minister, toured the Middle E., while Gen. Smuts toured E. Africa, to inspect the Brit. defences. This was the preliminary to the turning of the tide, which began with the capture of Gallabat, the Abyssinian-Sudanese border. which important position had been taken by the enemy in June. This capture was made by Brit. and Indian troops, with tanks and artillery, and with the co-opera-tion of the R.A.F., the enemy being taken by surprise. The R.A.F. also attacked by surprise. The K.A.F. and attacked the key positions of Agordat and Keren in Eritrea and bombed Assab, a port in Eritrea. The enemy now began to appre-ciate his danger, fighting grew flercer, and in the next four days Gallabat changed in the next four days Gainata Changes hands sev. times. Asmara, cap. of En-trea, Gura, and Massawa, Eritrea's chief port, were bombed, while Brit. artillery fire forced the enemy to evacuate Meteu-ma, 2 m. from Callabat (Nov. 24). At the same time Asosa and Conduc in Abyssinia were raided by the R.A.F. who gave the Ita. no respite anywhere. At this period (Nov. 1940-Jan. 1941) the focus of interest was the battle of the W. Desert. Wavell's spectacular advance to Benghazi being facilitated by the fact that Gen. Cunningham's operations in It. E. Africa prevented the duke of Aosta, commander-in-chief in It. E. Africa, from

rendering Graziani any help.
On Jan. 14 Hailé Selassié (q.r.), who was now in Khartoum, announced that he would soon cross the Abyssinian frontier and lead an Abyssinian army against the

and railway buildings in Kassala in the raised at Gojjam by Ras Mongasha and raised at Gojjam by Ras Mongasha and the war drums were rallying the Ahys-smian patriots. Hallé Sclassié said that, like Marshal Badoglio (q.r.), he would enter Addis Abaha on a white horse, tear down the figure of a wolf erected by the Its in the square, and reinstate the white marble statue of the Lion of Judah (the original of which had been taken to Rome). Ras Kassa, one of the leading Abyseinian generals in the Abyseinian-It. war, arrived in Khartoum on Jan. 21 to join

his emperor.

By now Brit. troops were successfully advancing into Eritrea, while Indian troops were marching over the Sudan frontier. A contingent of regular troops of a newly-formed Abyssmian army went into action on the 22nd in the Sudanese-Entrean war zone, the command being given by Hallô Sclassié to a young Aus-tralian artiflery lieutenant. Hallô Sclas-sié had actually crossed the frontier a week ember, horsting the flag of Ethiopia on his native soil in the presence of Brit. and Abyssmian troops and accompanied by the Crown Prince and the duke of Harar the Crown Prince and the dust of the and leas k.assa. Kern and Arcota, to-gether with 600 lt. prisoners and two guns, and to the Brit. forces on Jan. 29. From kenya patrols had crossed the frontier at numerous points without meeting with the enemy. In Eritrea the Brit. attack was now concentrated on the Agordat-Barentu area. The distances and physi-cal obstacles of this difficult region were overcome by strong concentrations of Imperial troops through the labours of the Capo Mechanical Transport companies. By the end of the month operations were developing on all African fronts—the Sudan-Abyssinian frontier, Konya-Abys-sinian frontier, Eritrea, and It. Somaliland --while revolt was spreading in Abyssinia. Agordat fell on Feb. 1—giving the Brit. a junction of considerable strategic importjunction of considerable strategic importance on the Red Sea railway. Brit, and Indian troops, with R.A.F. support, stormed the position, capturing a dozen tanks, and driving the enemy towards Barentu and Keren—a stronghold surrounded by natural rocky fastnesses of great height. Other It. forces, harassed by Abysanian patriots, withdrew from the Entrean-Abysanian frontier, abandoning their mechanical transport and soon ing their mechanical transport, and soon they were in full retreat towards Gondar closely followed by mobile forces. Throughout feb. the enemy in Abyssinia, Eritres, and it. Somahland was always in retreat save at Keren—a stronghold on which every device of military engineering skill had been lavished. Here the enemy had sought to make a stand after being driven out of Barentu (Feb. 3) leaving hundreds of killed and wounded with many guns and other equipment which were of great

use for arming the Abyssiman patriots.

The Imperial troops now laid siege to
Keren. It was to prove the most costly operation of the whole campaign, but by Feb. 7 over 3500 prisoners had been taken, and wherever the enemy gave ground war material littered his track. There were now in simultaneous operation Its. The revolt, fomented by the Brit. in ground war material littered his track. that country, was now making great head—There were now in simultaneous operation way. The imperial standard had been some five movements: the penetration of It. Somaliland by S. African troops; an advance in S. Abyssinia by S. Africans; an advance through the N. part of Abyssinia, a patriot advance from the W. into Abyssinia and in S.W. Abyssinia; and the attack by mixed troops on Keren. The important port of Kismayu (It. Somaliland) fell to the S. Africans on Fob. 15. The attack was carried out in secondarities with the Parcel New and co-operation with the Royal Navy and the S. African air force. Five days later the troops were across the Juba R., while other troops from that dominion took Mega in S. Abyssinia, an It. air base some 6500 ft. above sea-level and the head

announcement that occupied ters. 'formerly ruled, claimed, or occupied by the It. gov. in Ethiopia and Somaliland were It. gov. in Ethiopia and Somaliland were placed under the military jurisdiction of Gen. Alan Cunningham, general-officer-commanding, E. Africa. Dagga Bur, 600 m. N. of Mogadishu, fell to the victorious imperial troops on March 10, Harar being their next objective. It. losses since the opening of the Somaliland offensive had now meebed 30 000 prison. offensive had now reached 30,000 prisoners, while practically the whole of it. Somaliland, a great part of Eritrea, and enormous supplies of war material had



Imperial War Museum: Crown copyright

ABYSSINIA: THE OMO RIVER GORGE A British officer studies Italian defensive positions seven miles away

of an important motor-road to Addis Ababa. Later in the month the Imperial forces made a remarkably rapid advance in It. Somalliand. They took Moga-dishu, the cap., on the 25th after a march more rapid even than that of the army of the Nile in Cyrcnaica. This gave them the centre of a good road system and so demoralised the enemy that over 9000 of them surrendered. On the Kenya-Abys-sinia border Abyssinian irregulars drove the Its. from their last footholds in the Brit. colony by taking both Brit. and It. Moyale, positions which had proved almost as stubborn as that of Keren. On the first day of March an important pass covering the approach to Koren was cap-tured by an Anglo-Fr. force advancing from the N., the Fr. troops being Senega-less who had trekked across the continent to Port Sudan to help the cause of Free Frenchmen. Burye, an important It. fort, fell to the patriots on March 4, and

Penetration into Abyssinia was now in progress on twelve fronts, including a thrust on Gondar in the N., a drive by putriot forces towards Debra Markos, the next goal after Burye; a Brit. advance on Harar from It. Sonaliland; a thrust from the Sudan to Afodu; and other penetrations in the Blue Nile region of S.W. Abyssinia. But time was nonetheless an essential factor in the general plans of the Brit. authorities. The lenger Keren held out the greater the possibility of the rains saving the Its. On Alarch 18, bourses. But Trains. possibility of the rains saving the Its. On March 16, however, Brit., Indian, and Sudanese forces, strongly supported by the R.A.F., made a most determined attack on precipitous positions covering Kenen and stormed three important heights 3000 ft. high, under cover of well-directed gun fire and hombing. Reverting to the earlier days of March, the position was that the Brit All, Africa column. Gold Frenchmen. Burye, an important It. was that the Brit. All-Africa column (Gold fort, fell to the patriots on March 4, and Coast and S. African Forces) and Brit. the same day was noteworthy from the and Patriot Ethiopian forces were all

fourteen days of the month the All Africa column averaged over 40 m a day across rising uplands on Abyssini's K threshold Other forces around Lake Fana were then nearer Addis Ababa but the formidable barrier of the deeply canvoned Blue Nile retarded their progress The Imperial Army from Kritrea was fighting at the immensely strong It position of Kelen, the biggest battle of the campaign A trail of abandoned ammunition and material along the modern tarmac road marked the headlong flight of it soldiers. The All Africa column was cleaving two disorganised Africa column averaged over 40 m a day flight of it soldiers. The All Aftica enemy dies which were desperately trying of the description of the description of the description of Julian 20 m L of Harar, law ahead of the All Africa olumn The question was whether the olumn The question was whether the Its would make a stand there or in the nils round Harr But air reconnaissance found lyight afficient whence it was inferred that Harr with its high mud wall pierced by five gates would prove the key to the whole compaign. Yet it was doubtful whether the Its could spare as many as 10 000 troops for its defence—the number believed to be. for its defence—the number believed to be oncentrated in the vicinity Already to Keren and at all costs they must hold that position and the Blue vile crossings They had also to keep garrisons every where to ward off pair of while finally they had already lost over 30 000 prison ars, a serious depletior of the 500 000 men Italy was supposed to have under aims in

Meanwhile, on Mu h 18 Berbern was retaken as the result of a combined sea land, and also operation by imperial forces on the whole of But Somailland was recaptured, the It or upation having thus recaptured, the it of upation having this lasted some seven months Indications were, however, that the its never effectively occupied the object, failing to organise even a sembline of administration. Berbeia was actually taken with little fighting, a tribute to the skill and laring of the option which was effected by two landing parties, one mainly of Indian troop the other of Arnband Somah volunteers. The significance and Somali volunteers The significance of the rapid advance to Daga Bur (600 m of the raphic advance to Dagga Bur 1990 in N of Vogadishu), towards Jijigi and Harar, was that in this n ighbourhood existed one of the chief pissers into the Abysem in Highlands The Its hoped to reine to this int fortress and I old the limited number of practicable inlets in the expectation that the coming mains would restrict list operations to comparatively small columns The series of operations in E Al ca was in its way as billiant as the campaign of the W Descit If the

converging on Addis Ababa. For the first | formed the objective was far greater. The manner of the development of the campaign was in itself remarkable Apart the property of the property o position where for weeks on end they offered a vigorous resistance and contrived to hold up the Brit advance on Asmara and Massawa The Brit then initiated a specific furning movement from the N., which made rapid progress at first, but for long could not dislodge the enemy at Kercu

By March 27, however, the road to As man t was open to the victorious troops of man was open to the victorious troops of the Impenal Army of the Suden. The innul attack was delivered after fourteen days of ficre fighting an attack which batter down the last remnant of enemy reast ince and carried the But troops trump hantly into the the Guns cars, and great piles of infes and equipment encumbered the roadside. The It garrison numbering 10,000 including savoy Grena diers (ar binier), and Alpini, with nearly 200 c instrought from prepared positions of great strength on peaks 4000 ft above the Internal files on the Brit troops tolling up the teep slopes in a temp of well over 100. But nothing could deter the ad-100 But nothing could deter the ad vin crot even icekless counter attacks by tilts who realised that the fall of kein meant the loss of 1 11 rea the ono really loyal it colony the one outlet to Abysini In kitting gorge white I m from the trible ted 200 ydes out of the roll to thwart the Brit advance, the Brit soldiers fought hand to hand with machine gun crews which had been covering this obstacle. Harar fell at the covering this obstack. Harar fell at the the list and with this double success, the list obtained po session of three quarrof listed and practically scaled the list of the list force left in what ich und of Muscolinis F. African empire. The list phase of the campaign now opened with the general crumbling of the force left to the duke of Aosta viceoy of Abs. init, Brit planes actually taking off the women and children to place and safety. An init, first planes actually taking off it women and children to place sof safety. At the beginning of April more than half try-sania was in Brit hands. From A mara feen Platts troops were clam beging down mts 3000 ft, high to capture Mi wa while mother column was reachin, ut the road to Adowa the occupation of which was calculated to have a strong moral effect on both the Its and the kthicpian patriots. In the contral part of the front Gen Cunningham's troops were marching from Hagar and Diredawa restrict limit operations to comparatively small columns. The series of operations in E. Africa was in its way as brilliant as the campaign of the W. Descrit. If the campaign of the W. Descrit. If the army of the duke of Aosta was less formidable than that of Marshal Graziani the natural difficulties of the terrain were greater. If the pacq was slower, except for the rapid advance northwird from the by African troops and surrendered. The sole port now lett securely in the hands of and Harar, the size of the ters, which

was threatened, and the navy were closely watching it. The only consider able tas, held by the enemy in the interior were Dessle, Gondar, and Addis Ababa. Gondar was all but cut off by Abyssinian patriots, who were pressing on round Lake Tana and the sources of the Blue Nile. Dessle was filling with retreating soldiers from Eritrea, who, while streaming through the Green Valley were subjected to a major bombing attack by the S. African squadrons who raked the roads in the valley from end to end. Revolt was now sweeping the country behind the It. lines. Ironically, along the Addis Ababa railway, Brit, imperial troops were hurrying to protect the Its. against their own native conscripts. Abyssinian destreaming the roads are reconjung scrub everywhere except at Dessie and Addis Ababa, where it, white

setters were sulping the its, from the surrounding scrub everywhere except at Dessie and Addis Ababa, where it, white troops still outnumbered them.

The historic battlefield of Adova now fell into Brit, hands and then the hely city of Axum, and on April 9 Massowa capitulated. In the whole country there were now left only more or less discrepanised budies of troops, groung their organised budies of troops, groping their organised bodies of troops, groping their way towards Dessie Gondar, and Jimma Flerce fighting in the Foundation Pass, 14 m. S. of Dessie, was the prelude to the Brit. capture of this mt. stronghold in the last days of April. But there was still a strong force of the enemy under the still a strong force of the chemy under the duke of Aosta, at Amba Alagi, another mt. stronghold. Here the Its. held out for nearly three weeks. By May 14 the enemy had been driven back by the S. Africans to the peak of Mt. Alagi, where they had tunnelled galleries into the cliff faces and cut gun emplacements out of the rock. Machine-guns and artillery fired from the narrow mouths of expense whomsthey were insuming from a new contract. caverns where they were limitude from anything except by direct hit. But there was one weakness in this well-nigh impregnable stronghold. The long-prepared defences were intended to meet an attack from the N., and the S. Africans were plerging the vulnerable S. side. The stege of Amba Alagi reached its grunmest stage on May 14 when a terrible artiller, bom-bardment almost wiped out the 1t. forces. Deserters at night stole their own lorries to Deserters at night stole their own lorries to escape. The Transvaniers blusted the Its. out of their dug-outs. Fow escaped to carry back the tale of terror to the duke of Aceta's cavern—the very cavern in which Hailé Selassié had sheltered tive years previously from his It. conquerors. Some ten days later the duke of Aceta formally surrendered, together with some 19,000 prisoners. Thereafter there remained only small neckets of housloss rusistance. In amall pockets of hopeloss resistance. In only four months a well-equipped force of 125,000 Ita. and 200,000 native troops, of which 170,000 were infantry, with a considerable air force and 212 acrodromes, under an able commander, had been smashed and scattered. Of this great host the Brit. forces under Gen. Cunningham had captured about 190,000; 125,000 had deserted leaving nothing remaining in military formation, apart from one or two small bodies, numbering altogether 6000, who were soon to be rounded up. The were,

urgently required elsewhere is shewn by the fact that the Brit. forces at the beginning, when Italy took up arms. numbered fewer than 25,000 men, of whom only 5000 were white. At no time did the Brit. forces on all the fronts in E. Africa, even after the arrival of reinforcements from India and W. Africa, approach the strength of the combined It. metropolitan and native armies. And again, whereas the it garrison had begun with hundreds of heavy guns, the Brit. forces had no more than 63 field guns. Yet in four months the imperial forces under Gen. Cunningham had conquered three countuningham had conquered three countries and reconquered a fourth, totalling some 700,000 sq. m., captured 120,000 prisoners, 800 heavy guns, and 150 tanks, as well as thousands of motor vehicles, thousands of machine guns, and millions of rounds of ammunition. Most preconceived ideas of colonial warfare were abandoned. In this remarkable campaign sheer speed broke the its. The Brit. concentrated superior flavourer in a four warfare centrated superior fire-power in a few unexpected places. Gen. Cunningham's victory was the story of battles which began among the swamps of the Juba R. that cuts of Kenya from It. Somalikand. He formed a passage over the stream at two points, cut through the It. lines, and his two columns converged on one another full they met behind the enemy and formed a triangle at the apex. In one increasing wave the Brit. forces swept up the coast through Kismayu, Brava, and Moga-disin, then wheeled left across the desert with lines of communications lengthening to 1500 m. Great tracts of omeonquered ter. lay on either side, but still the Brit. forces pushed shead, lorries, guns, hospital and staff cars roaring up the road to the all-important position of lunes. It was without the same of the sa Junea. It was untechnical and unpre-cedented, but the Faccist orces, be-wildered at the loss of moral, which spread rapidly through their ranks at length surrendered their chief stronghold, keren, and that was really the beginning of the end. It is not a little strange that, at the beginning, between Jane and Sept. 1340, the Its. did not follow up their only success in capturing Kassala and Gallabat by a mechanised push on Atbara, the vital transport centre of the Sudan, and kartourn. Such a move might well have brought the whole country under their toke in a few days. In Kenya, too, they were advancing from Moyale to Buna, were advancing from Moyale to Buna, and in the Sudan, in Oct., they launched a drive into the S. of the country which, if better supported, outht to have reached the great Sennar Pain. The secret of the Brit. avoidance of disaster at this critical juncture, was that while machine-guns were being mounted on the walls of khartouur, and tanks traps laid before them, the Brit. generals, by a policy of aggressive patrols and then rapid movement of their small forces, caused the enemy to believe that they were opposed by numbers tanfold as great as they really by numbers tenfold as great as they really

It. resistance did not end entirely with I their right flank on the Curso and throughthe surrender of the duke of Aosta. disorganised garrisons of scattered strongholds, particularly at Jimma, Debri Tabor, and Gondur in N. Alyssinia, pro-tected by the seasonal tropic rains, held out for some weeks the last remnants of Muscolini's great army of Abyssinia. During this period, Ethiopian patriot troops took an effective part in operations which resulted in the capture by those forces alone of some 10,000 prisoners. The tt. commander of the garrison at Debri Tabor, 60 m. E. of Lake Tana, surrendored early in July (1941), not long after the fall of Jimma, and with his surrender, the sole important remaining garrison was that at Gondar, a strong natural position almost comparable with Keren. In the Battle of the Lakes', the operations which virtually ended with the capture of Jinma on June 20, and resulted in the climina tion of It. resistance from a vast area S.W. of Addis Ababa, the Brit. forces took over 30,000 prisoners and more than 100 guns. See also ITALO-ABYSSINIAN WAR, over 30,000 parsonana and an agencial see also ITALO-ABYSHINIAN WAR, 1935-36. Abysmnian Campaigns: Official Story of the Conquest of Italian East Africa (H.M.S.O.) 1913; Christine Sandford, Ethiopia under Haile Selassie, 1916. Italian Front, First World War Campaign on. Italy declared war on Austria-Hungary on May 23, 1915, and a general mobilisation was ordered for the next day

mobilisation was ordered for the next day but war was not declared against Germany until Aug 23, 1915. On May 25 It. forces penetrated Austrian ter. in S. Tyrol and the N E. corner of Venetia and along the Isonzo (q v.). Gradisca was occupied within a few days and the crossing of the Isonzo promptly followed. On the W. flank progress was being made in the Trentino. Au-trian posts on the Alpawero taken by the Its. in rapid succession At the end of May the frontier was crossed at Lake Garda at Riva (N. end of the lake) During the first week of June there was a stiffening of the whole line, and lighting became more serious. On July 20, the Its gained a victory in an all-day light on the Lower Isonzo. This developed into a series of conflicts on the Car-o (q.v.). In Oct. the W. flank was improved by securing Mt. Nodic which gave the Its. command of the Ledro valley. During the winter of 1915-16 the Austrians were preparing a counter-offensive in the Trentino paring a counter-onemister in the Trentino under the command of Archatake Charles, with Field-Marshal von Hoetzendorff as his Chief of Staff. The attack was launched on May 14 and by May 19 the Its. were in retreat on the whole Trentino from and the Austrians reached It soil. In ten days they had captured 24,000 prisoners and 250 guns. Assay (q,n) fell to the Austrians on May 29, and although their flanks were held, their centre continued to advance. The Its. counterattacked, and by June 26 had recovered a good deal of ground. Gen. Cadorna (q.v.) the It. commander-in-chief, hunched an offensive in the Isonzo on Aug. 6, 1916, and captured the bridgehead at Gorizla, with 10,000 prisoners. Further progress westward continued throughout the month. On Sept. 16, the Its. advanced

out Oct. and Nov. continued to press the Austrians back on their N.E. flank. In May 1917 a great offensive on the Isonau was launched, progress being made cheftly. Of Gorizia, and with the help of Brit. guns a serious threat was made to the Austrana on the Lulius front. trians on the Julian front. Brit. monitors also fired on the rear of the Austrians from the gulf of Trieste. In June the Its. made the gail of freste. In June the its, made some progress in the Trentino. On Aug. 19 they resumed the Isonzo offensive mainly across the Carso, and by the end of the month the high ground S.E. of Madoni was in their hands. About this time, Ger, troops, under the command of Gen. Otto von Bulow, were being transferred to the Isonzo front, and attacked the Its. on Oct. 24, 1917 the Its. were thrust back at Caporetto (q.r.), and the rout continued until the Gers, captured the on Ort. 29. This exposed the Its. on the Carso to the danger of envelopment, and a hasty withdrawal was made to the Tagliomento: but here the Gers. forced a passage and the situation became critical. At this time five dive. of Brit. troops under Gen. Plumer arrived on the It. front. In Nov. 1917 Cadorna was succeeded by Gen. Diaz. The Lts. defeated all attempts of the enemy to pierce the Playe front, so they turned their attention to the mt. sector further N. Here they to the mt. sector further N. Here they gamed some points, but the presence of Brit. and Fr. troops prevented any serious loss. In May 1918 Lord Cavan succeeded Gen. Plumer in command of the Brit. troops. On June 15, 1918, the Austrians launched their final assault. They at launched their final assault. They at-tacked on a ninety-in from with forty divs. from Asiago to the sea. The Plave was crossed at Montello, and Venice also was threatened, but the sector held by the lirt. stood firm against all attacks. Hefore the end of the mouth the Its. counter-attacked with the result that the Austrans were soon in full retreat. Oct. 26 a great offen-ive was launched against the Austrians which turned the retreat into a rout and ultimate surrender. retreat into a rout and utilinate surrouter. See L. Villari, War on the Italian Front, 1932; G. L. MoEntee, Italy's part in urining the World War, 1934.
Italian Front, Second World War Campaigns on. For the events leading up to this campaign, see Africa, North,

this campaign, see Africa, North, Sicord World War Campaigns in. Full of Pantelleria, Lampedum, and other small Italian islands.—Pantelleria, which, after 1937, was strongly fortified as a naval and air base, surrendered to allied forces on June 11, 1943, and was occupied by allied forces very shortly after the white flag was seen from the air flying from a bill top. Thus strender was the first instance where a strongly defended enemy bustion has been conquered from the air. The air attack began thirteen days previously and by June 11 had swelled to a terrifying climax. Bombers, fighter-bombers, and fighters were sent against this one target. Flying Fortrosses in greater numbers than ever previously used by the N.W. African Air Forces, made repeated sorties throughout the offensive, which lasted from dawn to dusk. Twice the allied commander gave the garrison (numbering 10,000) a chance to end the destruction, and twice the garrison rejected the offer. The air bombardment was supported by naval bombardment and towards the end of the attack strong forces of cruisers and destroyers were tiring salvos at frequent intervals. Early in the offensive the airfield was wrecked. Every ship in the harbour was put out of com-mission. By dusk of June 10 the is batteries, well-concealed and in heavy batteries, well-concealed and in heavy gun emplacements, were sllenced and the s.'s doom scaled. In addition to the garrison there were 6000 civilians on the is., but, happily, they suffered hardly any casualties, for the is, consists of volcanic rock which is full of galleries and air-raid shelters. Lampedusa and the still smaller is, of Linosa, both in the Pelagie group just over 100 m S.W. of Sicily, held out but a very short time after the surrender of Pantelleria. Lampedusa was subdued after a naval bombardment followed by a heavy air attack and Linesa surrendered

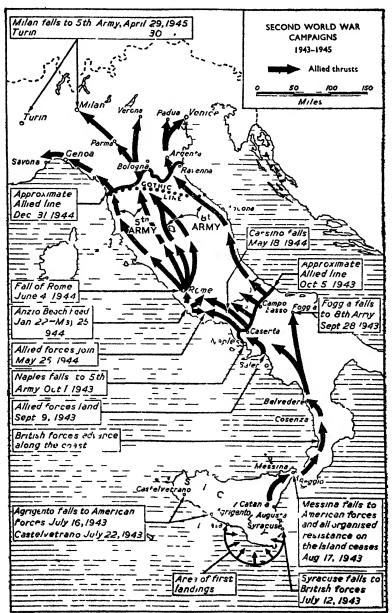
without a fight The Battle of Sicily (July-August, 1943)
—Angle-Amer forces under Gen. Alexander as deputy commander-in-chief, with Gen. Montgomery ammander-in-chief of the Brit. forces, in an armada of nearly 3000 vessels, invaded Sicily carly in July, 1943. The first stage of the invasion started on July 10, soon after the occupations of Lampadius, when tion of Pantelleria and Lampedusa, when the allied air forces crippled the Axis airbases in Sicily. This was so effective that the second stage, the estab, of bridgeheads in the is., was easily accomplished and the landings, preceded and accompanied by terrific air assaults and broadsides of warships commanded by Adm.-of-the-Fleet Sir Andrew Cunningham, on a 100-m. wide stretch of the coast from S. of Catania to Gela, met with only negligible resistance. The core of the invasion consisted of the seasoned troops of the Brit. Eighth Army, the Amer. Seventh Army and Canadian forces (First Canadian Infantry Div. and the First Canadian Army Tank Brigade). In the initial Army Tank Brigado). In the intui operations a large part was played by the troop-carrier command of the N.W. African Air Force and by paratroops, Amer. and Brit. Allied air forces acted throughout in close co-ordination with the sea and ground forces. 'Lightning 'aircraft left a trail of ravaged lorges, armoused cars and railway trains and its ning aircraft left a trail of ravaged lornes, armoured cars, and railway trains, and, in the vicinity of the ports, of small ships. Heavy day bombing attacks were made on Gerbini, Trupani, Milo, and Sciacca. Brit. raids by 'Wellingtons' were made at night on Syracuse and Catania. The Amers, took all the beaches assigned to them within three hours of their first landing. The strongest opposition was met in the Cape Passero area by Brit, and Canadian forces. The landings generally were less costly in casualties than had been expected and many hospital ships were held in reserve because they were not wanted. The next task was to secure the possession of the harbours and centres of

with the Canadians on his left flank, seized the road and railway S.W. to Pozallo in the extreme S. of the is., together with the port of Syracuse. other zone of operations -the bay of Gela - the Amers, under Gen. Patton, setzed Gelu, Licata, and other places along the Syracuse-Pozallo road. Seven enemy counter-attacks, the strongest in the direction of Gela, were made with tanks and infantry and all were repulsed, 2000 prisoners being taken. Ragusa, Florida, and Augusta fell on July 13 and two thrusts were now made from Syracuse and Augusta northwards towards Catania - the Amers., under Gen. Patton, seized Augusta, northwards towards Catania and S.-westwards to the Palazzolo heights which dominate the plain of Catania. Most resistance came from two Ger. paner divs., one facing the Brit. in the E. and the other the Amers. In the S. The allies soon penetrated in some sectors to a depth of 20 m. from the coast. By July 14 the Brit. Eighth Army was within 15 m. of Catania, but resistance was now obviously stiffening. In the W. the Amers, captured the important airfields of Course and Ponte Olivo. By this time over 12,000 prisoners had been taken, of whom 8000 were taken by the Amer. army. Though the Allied advance was speedy it was recognised by the commanders that, until the Catania plain and the Gerbini airlields were in their hands, resistance would be protracted, particularly in the mountainous regions of the N.E. and around Etna. Considerable gains, however, were made on July 15-16, the Eighth Army advancing sev. in beyond Augusta, and its spearheads striking into advance units of a posterior of the protection. advance units of a powerful Ger. force. Heavy losses were inflicted on the Axis forces in the W. sector, where the Amers. advanced sev. m. across difficult country. simultaneously with these operations, the heaviest combined air assault therefore launched from N. Africa was made on Naples (July 17) by more than 500 arcraft mostly from the N.W. Amer. Air arcraft mostly from the N.W Amer. Air Force, part of the Neapolitan royal arsenal being destroyed. Agrigento fed to the Amers, on July 16, a day of confused battle, with guns firing steadily from almond orchards and olive groves all round the city; but list tenples were unscathed. At the same time Porto Empedicle, named after the Schlan philosopher, also fell. The following day Caltanisetts, on the railway linking Agrigento and S.W. Sully with Catania and Messina, was taken by Gen. Patton's troops. 20 m. to the by Gen. Patton's troops. 20 m. to the E, the Canadians took Plazza Armerina and both Amers, and Canadians were now advancing on Enna, the most important paretton in the is. The Eighth Army, which had the hardest task in the campaign, was now some 3 in from Catana. On July 19 Rome was raided for the first time, when Amer, bombers attacked marshalling yards and railways—a raid which was to have immediate and profound effects on the political situation in Italy. On July 21 Enus fell and Amer. and Canadian forces were now threatening to turn the whole enemy line. With the to turn the whole enemy line. With the Amer. Seventh Army were Moroccan communication on the coast and close Amer. Seventh Army were Moroccan behind it. By July 12 Gen. Montgomery, Goums, who distinguished themselves as

mt infantry just as they did in the coastal mts of N lumsta With the Eighth Army sestab on July 19 of a bridgehead S. of Catania the Axis forces now began a general though olderly retreat towards
Messina in the areas of Catania about
6 m in with and 1 m in depth, the Gers
launched frequent counter attacks despite mounting casualties. Among their troops were lements of the rovived Hermann Goeling Panzer Grenadie Div but their numbers were dwindling. Casualties to numbers were dwindling Casualties to brit forces were far lower than had been anticipated. The Allied advance in the W half of the is continued with great rapidity. Castely trino with its import ant airfield, originally built for patrolling the Sicilian channel fell on July 22. Mai sair was then abandoned by the Aris troops. The threat to Palermo was accentrated Allied troops being now only 25 m. away, while other troops of the Sometimes Affect troops using now only 25 m away, while other troops of the Seventh Army were nearing the buy of Termini on the Neest Palermo fell to the Seventl Army on July 23, the enemy being completely surprised by a rapid thrust by advanced troops of highly with the true the Army of the Property mobile force. By this time the seventh Aimy had taken 27 000 prisoners, 250 guns and 10 000 000 rounds of ammuni tion besides destroying 84 tanks. The success of the Sicilian campaign coupled with the hombing of Rome, now had its political repercussions in Italy to Mussion line resigned and the king of Italy assumed supreme commar lofthe It armed for ea with Marshal Badogho is the new prime minister By the end of July the number of prioners was 7,000 three fourths of this total being taken by the Amers and it was now clear that the battle of Sicily had entered its culmin ting phase—the struggle for Catania in l Mesun; i he general offensive for these positions began to develop in Aug following a week of in tensive preparation during which large reinforcements of men an I guist had been reinforcements of men and runs had often moved up to the front The Brit 78th Div captured Centuripe after some very bitter street fighting. The 11st (High land) Div advanced in their right. To the left the Canadians captured Regulauto when the opposition was especially lies e Further the seventh Army cuttined Trains (Aug 2), Ceram and cuttin On the crast road the advance continued in the face of extensive enemy demolition. But the rate of Catania had been scaled at Centurity nearly 20 m away, for the commanding heights here gave the allies control of a the road from (atania round the W of i 'na in the same way that the Mayy had give a control of the 1 and round the k of I that and in such predicament the enemy had no alternative but to light in the city to the last or to campe under oover of darkness. He chose the lat er One strong reason for retirement was that

Axis defence The Amers, having landed parties at two points on the N coast so as to command coast roads to Randazzo, while the Brit took Actreale, the respective Allied armies were now fast converging on Randezzo Ger resistance had now however become more tenacious then ever The enemy tactics relied above all on demolitions and minefields protected with well sited machine guis, their hope being to evacuate the bulk of their armies under cover of rearguard actions to the It mainland. The rugged terrain was well adapted to these tactics. Randazzo however, eventually fell (Aug. 13) to the steady encerted Allied pressure The enemy had already been driven from most points N of Randazzo, and chare and Riposto on the E coast had been occupied. The Axis line in sicily now collapsed and their forces were m rull retreat Mossina fell on Aug 17
to the Amers who made contact there
with the Brit kighth Army later on the
same div All organised resistance in
Such hid now ceased. The Sucillan Such had now ceased. The Suillan compagn had thus ended after thirty eight does and the Allied forces stood in proximity of the mainland. Owing to the proximity of the mainland the Gers were able to run the guantile of his bombardment in the straits and to bring a few strains of the straits and to bring a second strain of the straits and to bring a second strain of the strains and the strains are the strains and the strains are the strains and the strains are strains. large; ut of then troops away Generally, high it of their troops away Generally, their release to the becomes for Skilv finally scaled the most by of the narrow seas to the Sawhei jershowly only Millacheld out in lenely lowlife, and the possibilities open dup were now almost unlimited. For tetal Axis caualtic were 180,000 Of the 10 000 to 70 000 Gers on the 18 at 1800 William 1000 William 1000 Gers on the 18 at 1800 William 1000 William 1000 Gers on the 18 at 1800 William 1000 Willia with 1 d between Aug 5 17 whin the Allie I are torces destroyed or damaged some 300 vessels trying to cross the straits Over 00 enciny guns and 260 tanks were detrived or captured while well over 1st meraft were brought down or cap-tured The Alles lost 103 tanks and 2st kun, and comparatively few aircraft The t ta. allied casualties were about 2,000—about 14,000 Prit and 11,000 Am 1

Further \ the \eventh Army captured Trums (Aug 2), Ceram and (aple) on the crass road the advance continued in the face of extensive enemy demolition. But the late of (atama had been scaled at Centurity nearly 20 m away, for the commanding heights here gave the allies control of a the road from (atama round the W of erms in the same way that the Navy had given control of the last or to expect under the city to the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, He chose the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, He chose the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, He chose the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, the enemy had no alternative but to flight in the city to the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, the enemy had no alternative but to flight in the city to the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, the enemy had no alternative but to flight in the city to the last or to expect under cover of darkness. He chose the last or to expect under cover of darkness, the entry had no alternative but to flight in the city to the last or to expect under cover of darkness. He chose the last of the same time dark of of the Brit. I have a cover of darkness the last of the same time dark of the



Gov. had surrendered its forces uncondi- | Ger. defensive ring in the wild mts. separtionally and an armistice was granted. Hostilities between the Allies and the forces under Marshal Badoglio (q r.) therefore ceased and all Its. who co-operated in ejocting the Gers. from Italy were promised Allied support. The Fifth Army under the Amer. Gen. (Tark, including a Brit corps, landed near Naples at 4 A.M. on Sept. 9, the Brit, and Amer. warships covering their disembarcation. Soon covering their disembarcation. Soon three Allied forces were advancing inland from each corner of a great triangle to seize the whole of the foot of Italy. The Fifth Army was meeting intense Ger, opposition on the Salerno beaches in a struggle which was developing into a great battle for Naples. Part of Montgomery's Eighth Army was advancing northwards in Calabria. Other elements of the Eighth Army, having taken Brindisi and Turanto, were following retreating Ger forces to the N. of those tra. The most desperate lighting occurred for the Salerno bridgeheads, the in itself baying quickly fallen. The Gers, hoped to built heat the invadors into the sea evil to hurl back the invaders into the sea and, holding the high ground overlooking the Allied positions, were able to subject the Allies to a devastating fire from well-sited guns. But the bridgeheads from Salerno to Agropoli held firm, while over more reinforcements in men and material poured into the beaches and also into more southerly ports, covered by naval and air forces. The enemy had the advantage in the air, for whereas the Allied fighter planes of the N W. African Air Force had to fly from a great distance, the Ger dighters could operate from near bases. Allied air forces, however, flew over 800 sorties on Sept. 13 to support the infantry and gunners who were fighting on the open rescent of the plain of Salerno without cover of vegetation or terrain against an enemy skilled in the defensive use of hills dominating almost every point of the bridgeheads. The fighting there now grew more intense than ever, and, to harses the Ger. reinforcements, the N W African Air Force on "ept 11 made the most concentrated offensive until now of the whole Mediterranean war Mean while the Eighth Army, having selved Bari, Cosenza, and Belvedere, were making forced. If unopposed, marches to link up rescent of the plain of Salerno without forced, if unopposed, marches to link up with the Fifth, from which they were now separated by 70 m. Throwing a powerful separated by 70 m. Throwing a powerful mobile force across the Apulian plain, they then captured the important an base of then captured the important an name of Foggia (sept 28), considerable casualities being inflated on the Gers. In the advance. Extensive demolitions had been carried out by the enemy at Foggia and, the Apulian aqueduct having been destroyed, the tn. was without water. At the same time Castelnuovo was taken by the Fifth

ating Naples Plain from the gulf of Salerno. Among the crass and along the valleys were fought some of the bitterest engagements of the war. Ger reenguards had to be havoncted, bombed and blasted from their strongpoints Brit troops played a great part in fighting a way through. Shortly afterwards the naval base at Castellammare 14 m. across the bay from Naples fell, and the whole Serrento Penin-sula was in Allied hands. Naples fell on Oct 1 to Gen. Clark's army. Bombing and Ger. demolitions had left deep scars Bombing and Ger. demolitions had left deep sears on the city. Most of the public buildings, factories, whatves, wate houses, and installations of military value had been destroyed, mainly by fire. Shops were empty, roads closed, and streets inlead and demolished. As the Allies had long foreseen, the Gers had evacuated the city or criter to fake up a new toper deforting. norder to take up a very strong defensive position on the Volturno R, and on the line of that riv bitter fighting lasted for line of that riv bitter lighting lasted for some time. Meanwhile against growing resistance the Eighth Army pushed W. from Termoll on the Adrithe coast. The Fifth and Eighth Armies were now in contact with each other and the Allied line ran from Naples through Caserla, Campobasso, and S. Martino to Termoli. By capturing the time of Capua early in Oct. the Fifth Army at length won a bridgehead on the Volturno R. But though they advanced to the entire W. course of the riv in a single day, progress in the difficult riv in a single day, progress in the difficult country of the Apennines was slow. To-wards the end of the mouth there was a general advance on the whole of the Allied line except at its extrinities. It was evident that the line from Vasto on the Adriatic to Mondragone on the I's rrhenian sea by way of Isernia and Venifro, would be strenuously defended by the enemy, for it represented the strongest position that could be held S. of Rome and all roads now led to the cap.

Isernia, pivotal point in the Ger. de-tence and centre of their lateral communications, was captured by the Eighth Army on Nov 4. The Gers were also driven off Moote Massico in the 3, the aliced armies making a substantial advince along the whole line from the Tyrrheman coast to the knot of the Montagna de Matese in the centre of the Ger line Almost simultancously the Eighth Army struck across the Frigno R on the section of the front near the Adriatic coast, but there were near the Adriatic coast. But there were strong prepared for defines arross the riv 5 m behind and much bitter fighting lav annicilately ahead. Visio, on the coast, was taken on Nov 7 without a fight. Though unimportant as a harbour, it gave command of most of the road running SW, to Castiglione Meanwhile the Amer Fifth Army had advanced past Army, whose tank spearheads were thrusting acto the plain towards shatt red Naples, while other forces were pressing on through ditte alt mountainous country N. of Salerno The frenzy of Ger. demolitions in Naples and on the good to the city indicated that the Ger. commander, Kesselring, had no intention of defending it. It took the Fifth Army six days to pierce the Castiglione on Nov. 10 gave to the Eighth Army control of the whole road from Vasto to this important supply point in the Apennines The flying of the swastika over the vil. of Castelforte, on the Novice of the new swellor feasible of the new swellor feasible or several of the new swellor feasible or several of the new swellor feasible o side of the now swollen Garigliano seemed more than anything a gesture of defiance : but it symbolised the Ger, command's long obvious determination to stand and fight along the magnificent defensive positions on which it had now been thrown back. This defensive line is not a single line nor yet even a series of lines; rather is it a mass of easily-defended hills or mis. 36 m. in depth. The Fifth Army was now only on the approaches of these positions Savage counter attacks were launched to most virtually every Allied Improvement of position. It was evident to the Allied Command that, in view of the enemy's defensive strength, even local attacks and breaches might require long planning for what seemed to be disproportionate effort.

The Gers, were, in fact, well placed in Italy. They now had ten divs. on the central front facing the Fifth and Eighth Armics along the Carglinno-Sangro hue, stretching across to narrowest part of the Apennines, is the highest and wildest control the Apennines, is the highest and wildest and the Apennines, is the highest and wildest and the control of the Apennines, is the highest and wildest and the control of the Apennines, is the highest and wildest and the control of the contr country in the whole range. The Ger hope was that, even if Montgomery broke the Sangro line and threatened Rome from the N.E., they could at least hold him for a time in the mts. between the two fronts. Altogother the Gers, now had at this time (Nov. 19) nearly fifty divs. in Italy and the Balkans, an increase of from 10 to 15 divs. in the past mouth and obvious evidence of their realisation of the Allied threat to the whole S. and S.E. of

Europe. On Nov. 29 Gen. Montgomery, after a period of heavy rain and bogged conditions, began a new offensive across the Sangro, his attack being preceded by a demoralising air and artillery bombardment. Allied mastery of the air was so complete that in its initial attack the complete that in its initial action is lighth Army succeeded in gaining posi-tions along the outer edge of the Gora, winter defence line. Brit., Indian, and New Zealand troops made determined attacks, the enemy resisting with suc-cessive counter attacks supported with tanks including flame-throwing tanks, The sternest fighting was around the vils. of Mozzagrona and Santa Maria, which are 4 m from the sea, and also in the Archi area where a second bridgehead was estab On Dec. 1 the Eighth Army made a general advance along its whole right flank and shattered the most important part of the snartered me meet important part of the Gers. winter line in Italy. Lanciano, Castel di Frentano, and Casoli, on the lateral road from the Adelatot to the centre of Italy had now fallen to Montgomery, whose advance was added by the Tactical Air Force's devastating assault on Ger. positions and transport and their class support of the attacking troops close support of the attacking troops. The Gers. were now falling back in the Sangro sector, but the pursuit was ham-pered by the bad weather. Large

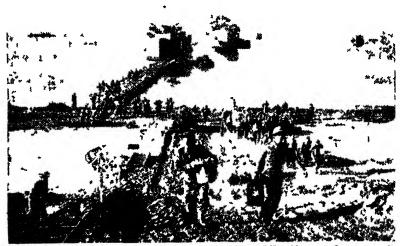
abandoned by the enemy, who had suffered severe casualties and was now rushing up reinforcements from N. Italy, in the ensuing days, in the W., Gen. Clark's Amer. and Brit. Forces, in a desperate struggle in rainy weather and across country which remains flooded and across country which remains flooded and across country which remains flooded and waterlogged long after the rains coase, slowly but surely drove the enemy from his strongly fortified positions on and around Monte Maggiore and Monte Camno. But the Gers, fought grinly to the first their still determine allow the pred defend their vital defences along the road to Rome. Hills, valleys, and ravines were defended with all the devices of mines and entanglements calculated to delay advancing troops, while deep in the mt. slopes gun emplacements were hewn out of the rock to a depth of 6 ft. or more Transport was so difficult and troops in such inaccessible places that supplies had to be dropped to them from the air. the E. the Eighth Army, despite a deluge of rain, crossed the Moro R., Canadian troops securing positions N. of it, includ-

Thomps securing positions it. or in, means ing Ortona.

Thereafter, for fivo weeks, there were no marked changes in the respective positions of the opposed forces. But on Jan 18, Brit, troops of the Fifth Army eventually crossed the Garigliano in the Tyre hemian coastal strip in face of fierce yet authorize Gor resistance. On the next on flective Ger. resistance. On the next day very hard fighting developed particu-On the next larly round Minturno, Castelforte, and Sulo vils. Hard also was the struggle on the high ground covering the Applian Way where it runs by the sea towards Formia and Gacta. The destruction of bridges and the sowing of innunerable landmines and the sowing of innumeratic landmines hampered progress. In the attack on a 7-in. Front from Minturno and Castal-forte cruisors and destroyers of the Royal Navy bombarded shore positions in the gulf of Gaota. Initially successful sea borne landings were made on Jan. 22 by Pitth Army troops S. of Rome near Notition and Angle only 32 m. from Rome. tuno and Anzlo only 32 m. from Rome, the troops advancing well inlard before meeting any resistance. The ters., far from expecting such a move, had sent strong reinforcements, including their best strong reinforcements, including their best motorised Panzer Grenadier divs. from the Rome area, S. to the Fifth Army front, where by then they were believed to have 100,000 men. The new Brit. landings were covered at sea by naval forces—Brit., Amer., Ok., Dutch, and Fr. under the command of Adm. Lowry of the U.S. Navy, Adm. Troubridge of the Royal Navy commanding the forces which landed the Brit. troops. The simultaneous Allied air offensive was directed against the ring of arrields round Rome against the ring of airfields round Rome and then on rail and road communications and then on rail and road communication-radiating northwards from the cap. These attacks by Flying Fortresses, Liber-ators, and R.A.F. Wellingtons ranged along every railway artery in the triangle formed by Fome, Pisa, and Florence. Other targets were Civita Vecchia, the nearest port N. of Rome, and a villa near Frascati (15 m. S. of Rome) which was known to be the carefully-concealed headquarters of Ober-kommando Sudwest, the quantities of guns and equipment were U.S. 12th Air Force scoring twenty-six

hits on the villa. Along the Garigliano valley advancing Brit forces repulsed heavy Ger counterattacks between Castel torte and Minturno (Ian 22) Even by the 25th no effective redstance to the landing- had been met and still more troops and supplies poured into Nettuno But to the 3 the Gers launched still more violent counter attacks against the lifth Army's main front in the Garigliano and eventually found to a halt, it had suc Rapido its area, most of those onelaughts acided in establishing a firm investment being hurled back with heavy loss to the of the Allied positions About Feb. 12

found time to concentrate a powerful army in the Alban hills overlooking the beachhead, bringing substantial conforcements from great distances. An Allied advance across the Applan Way met with stiff to-sistance and on heb 3 the Gers opened their first major attack on the beach head This was sustained with varying intensity for more than a week, and although it was



Imperial War Museum Croun cot sright MEN OF THE 2ND INFANTRY BRIGADI IT AVING FANDING CRAFT,

JANUARY 22 1911 ANZIO

enemy particularly around Minturno Ihere were also violent struggles for the commanding position of Vinte Croce V of the important and hotiv contrated to of (whin) By Jan 29 the American Hotives had crossed the Rapido

After the Anzio Nettuno landing had been au cassfully made, it seemed that was power despite the loss of two cruisers and two landing craft, had into vened with decisive effect to turn the figure of the terposition on the Casino front and cut the lines of a mamunication to Rome When, therefore, in the first few days hardly any opposition was met, it seemed possible opposition was met, it seemed position of that the der. commander, Kesselring, that the attack too had spent its strength. must begin a general withdrawal. Gen. In the ensuing week of bad weather here to consolidate his position on shore pared to deliver his third attack. This but, before he could do so, the Gers. had

the initiative passed for a brief space to the Allies when Brit troops advanced near Curneto but four day later kesselling resumed the assault with a fur our attack on a narrow front along the Anzio Albano tond Deep penetrations were made in the Allies position, but after some days of exceptionally bitter fighting this second for attack also commonced to failter. The heavy gives of the Allied first intervened with powerful support and as the tide of a-squit began to turn. the lombers on the lifth arms concentrated their weight against the flamming Ger attack and by Feb 22 it was evident but it exceeded both in intensity. It was delivered early on the 29th, Kesseiring's tactics on this occasion being to concentrate a great weight of attack upon a very marrow front, while trying to contain the Allied forces holding other sections of the perimeter by subsidiary or local operations. The main blow was delivered with three divs. against a sector of no more than a thousand yards on the Carroccto side of Cistorna, the aim apparently being to strike at the hinge between the Britand Amer. forces. It fell, however, directly on the Third Amer. Infantry Div., which included some of the most sensoned troops the United States had in the Mediteranean area. The Amers, were forced to yield some ground before the innertus of so fremendous a weight of men and armour, but their counterattack was soon leunched and by the next day they had regained all the ground won by the ciers. Meanwhile the line as a whole had held at the other points attacked so that by March 1 the Gers, were everywhere tack at their starting-points, having infleted heavy casualties, but having themselves suffered much more severe loses.

inuch more severe tosses.

General Alexander's Attack on the Gustar' and 'Hat' I nes—Capture of Home.—On the night of May 11-12 (re. Alexander launched a new offensive on the grand scale. This oftensive was really the opening of the general as aut on Hitler's fortress of Europe, it being the Allies' intention to invade France within a month and Stalin's to attack along the entire E. front almost et the same time, so as to emborrass the Gor. High Command with unultaneous oftensives in the W., S., and E. Alexander's oftensive was delivered after an intricate regrouping of armics, the main weight of the Eighth having been brought across to the W. side while the reconstituted Royal It. Army while the reconstituted Royal R. Army (Corpo Italiano di Liberazione) took over the Adriatic sector. Having crossed the lis. Rapido and Garigliano, where these formed part of the Ger. (Justav Line, the Allied forces were soon assaulting the whole line with irresistible force. their victorious advance they were given tremendous air support. Heavy bombers, too, made a huge gap in the Avisio viaduct, thus stopping the movement of supplies through the Brenner Pass. Fr. forces-mainly Goums and other colonial troops accustomed to mountainous country - made a spectacular advance on Ausonia and the vicinity. Moving with meredible speed across many miles of difficult mt. terrain they captured Monte Majo, opened a dangerous breach in the Gustav Line. and disorganised the whole system of defences in this part of the enemy's line. The Fr. were helped by a corresponding Amer. advence to the 8. Meanwhile Brit. forces were advancing through the Int. forces were advancing through the mouth of the Liri valley and threatening the Via Casilina and the Cassine position, while Polish troops had secured dominating positions N.W. of the Abbey (Monte Cassine). San Glorgio, was carried by storm, Meanwhile the Amers, were pushing ever further along the Applan Way and the W. coast. At the same time,

with the capture of Pignataro by Indian troops of the Eighth Army, a substantial bridgehead was estab. on the N. bank of the Liri and the Ger. grip on Cassino, the Via Casiina and the Abbey was relaxing. Cassino th. eventually fell on May 18 to Brit. troops and the Abbey was captured by the Poles. (For an account of the pre-tracted struggle for Cassino, Feb.—May, 1911, see Cassino, Battle or). With the fall of these famous positions the Gustav-Line S. of the Apennines had ceased to exist, and the victorious allies were everywhere advancing on the outposts of the 'Adolf Hitler' Line—the name of these rearward positions being some indication of their importance in the eyes of the Ger. Command. Farther S. the Fr. captured Esperia and the Amers., who had seized Forma, were now overrunning the Gaeta peninsuls. So far some two fifths of the Ger. Tenth Army, which was holding the main front, had been almost destroyed. The Aquino-Ponteorro position was now the lynch-pin of keeseding's defences, for it was the centre of vital road communications, which, if lost, would mean that the Allies might turn the whole N. part of the Hitler Line. Hence Ger, resistance now stiffened considerably and there were counterataks against both the Brit, and the Fr. (ict. local reserves were thrown in in an effort to save the situation, which, however, still further deteriorated with the local more high ground N.W. of Pico.

A new and dramutic turn was now given to the campaign by the sudden launching of a strong offensive by the Anglo-Americaes of the more or less dormant Anglo-Kachiead. This was in fact the second phase of Gen. Alexander's general offensive. The struggle now grew most intense: Fr., Polish, and Brit, troops were wrestling successfully with the dense and latticate Ger. defences of the Liri Valley centred on Pontecorvo and facing repeated and desperate counter attacks, while the Amers., meeting with slighter resistance, were overrunning the trackless mass of the Volscian mist to the S. Asur Borgo Grappa, on the coastal highway between Terracina and Anzio, the heachhead forces at length linked up with the main lifth Army front, so that a single Allied from the work was now in the hands of the Appian Way was now in the hands of the Appian Way was now in the hands of the Allies. Allied tanks, supported by infantry, soon wiped out the last Ger. resistance in the centre of the heavily damaged in. of Cisterna, and Brit, troops broke through the defences about the railway station on May 25. All that day a house-to-house battle was fought among the crumbled ruins of the in. On the same day that Cisterna fell Pontecorvo was taken by Canadian armoured cars. That memorable day saw the whole original Ger. defence line shattered. Allied tanks were now massing with other strong concentrations in the coastal plain for a powerful thrust from the Appian Way to Highway Six (Via Casilina), Keeseiring's supply route. All through this day tanks and infantry

carious that the withdrawal of their divafrom the Liri Valley was made due northwards instead of in the direction of Rome. Resecting's forces were virtually split in two, one body retiring into the Apennines, the other into the Alban Hills, which latter constituted the last naturally defemsible positions protecting the cap. from the S. Over 10,000 prisoners had now fallen to Gen. Alexander. Yet the Gers. continued to make a stout, if ill-organised, continued. Kesselring, in the endeavour to retain Rome, staked everything on the defence of the strongholds of Velletri and Valmontone, the two bastions of the Alban Hills. The last battle for Rome now be-Fierce lighting raged in the Alban foothills, with desperate counter attacks by the Hermann Goering Div., which now re-appeared and temporarily checked the Amers. S. of Campo Leone the Brit. forces made a substantial advance. N.W. of Cassino New Zealanders were pressing onward to the important stronghold of Avezzano, through which ran Kesselring's vital escape route. Velletri was surrounded by June 2 after the Amers, had taken Monte Artemislo. Velletri and Valmontone fell to the Fifth Army that day and the fall of Rome was imminent. ontstanding and significant success in the Alban Hills was achieved after only a week of bitter struggle in which Ger. resistance grew more intense each day, the vine-yards of Velletri being packed with Ger. snipers. Velletri suffered tragically in the encounter, and viewed from the Applan Way, which skirts the tn. on the W. side, it seemed as if not a single house had escaped damage.

The Fifth Army entered Rome ou June 4, after some heavy fighting in the outskirts. The Gers. did little damage to outskirts. The Gers. did little damage to the city, partly because their retreat was too precipitate and partly because Kesselring accepted proposals by the Vatican to declare Rome an open city. The main objective of Gen. Alexander was, however, not the occupation of Rome; it was the destruction of the Ger. armics. Leading elements of the Fifth Army passed through Rome on June 5 and crossed the Tiber. The wreckage of Ger. rehicles littered the road for 80 m. N of vehicles littered the road for 80 m. N of Rome. Hundreds of heavy bombers Rome. Hundreds of heavy bombers joined the fighter-bombers in continuous attacks on the retreating enemy. Eighth Army mantry and tanks advanced along the whole line of attack. The total of the whole line of attack. The total of prisoners had now risen to 20,000. Civita Veochia, the naval base 40 m. N.W. of Rome, fell off June 7, Viterbo and Tarquinia on the 9th Further and further the Gers. were being forced back E. of the Tibes. The advance on the right was

poured through the gap in the Hitler Line near Pontecorvo, forcing the encury to evacuate the tn. and to swing back their districtions on the Aquino defences so that it now ran insecurely E. and W. on the S. side of Highway Six. The Ger. Italy, swiftly in the W., slowly and hold on the Via Casilina was now so presented that the withdrawal of their diversions the control of the coast Indian troops entered Pescara, the sluice gates of which above are, the sluice gates of which had been destroyed by Allied hombers some weeks previously. Kesselring's line was now that it now ran insecurity in the coast Indian troops entered Pescara, the sluice gates of which had been destroyed by Allied hombers some weeks previously. Kesselring's line was now that it now ran insecurity E. and W. on the State of the Coast Indian troops entered Pescara, the sluice gates of which had been destroyed by Allied hombers some weeks previously. Kesselring's line was now that it now ran insecurity E. and W. on the State of the Coast Indian troops entered Pescara, the sluice gates of which had been destroyed by Allied hombers some weeks previously. Kesselring's line was now that it now ran insecurity E. and W. on the State of the Coast Indian troops entered Pescara, the sluice gates of which had been destroyed by Allied hombers some weeks previously. Admatic.

After troops of the Seventh Indian Div. had crossed the Pescara and the tn. of Percara had fallon resistance on the Adri-atic coastal sector grow less stiff; there artic coastal sector grow less stall; there was, however, greater resistance in the Wespecially at Grosseto and in the centro around Terni. By now ter, strength in Italy had been halved by Gen. Alexander's offensive. But Kesselring still had the equivalent of twelve and a half divs. left to fight, three of them fresh including the Fourth Parachute Div. About 70,000 men or the remains of eight and a half divs. were now (June 23) deployed on a line across Italy which ran through Chlosi, S. of Lako Trasimeno, N. of Perugia and to the Adriatic about 30 m. S. of Ancona. Heavy rains had given the Gers, a respite and enabled them to recover equilibrium. Eighth Army forces on each side of Perugla were engaged in very heavy fighting and it was apparent that the Gers. had no intention of withdrawing from their strong positions between Lakes Trasimono and Chiu-i without an attack in force.

A Fr force landed on Elba on June 18 and, with the support of allied aircraft and ships, soon occupied a large part of the is., which was important to the Gers. as a submarine base. The chief obstacles to the lauding, was in the Golfo di Campo ou the S. coast from powerful batteries on the Capo d'Enfola. They were strongly sited on granite heights but were put out of action by bombing attacks. By noon on the next day resistance ceased with the capture of Portofernio, the remainder of the garrison, numbering nearly 2000 Gers.

being captured. The Allied Advance to the 'Gothic Line.' -The advance of the Allies to the so-called 'Gothle Line' involved sharp fighting in difficult mt. country, but by early July the Eighth Army had broken through the Ger. defences to the W. of Lake Tradineno and in the direction of Arezzo, 20 m. N. of the lake. The Gothle line ran from Pisa on the Tyrrhenian coast to Rimini on the Adulatic; it had been powerfully fortified for a year past because it was the pen-ultimate line of natural defence before the ultimate line of natural defence before the valley of the Po and, if the Albes broke it, Kesselring's only remaining substantial line was the curve of the Apennines E.S.E. of Genoa. The Fr. corps now took Siena, an anct. city which was an important point on the W. approach, by the Via Cassin, to the Gothic line. A fortnight later Polish troops took Ancona and the Amers, entered Leghorn where the port installations were found to have been destroyed. The capture of Ancona was a swift exploit helped by Polish tanks, and over 2000 prisoners were taken. and over 2000 prisoners were taken.
The enemy, however, maintained a very stubborn defence along the high ground facing the Eighth Army in front of Florslower but the terrain was much more The enemy, however, maintained a very mountainous; but by the capture of stubborn defence along the high ground Aveszano the Eighth Army gained confacing the Eighth Army in front of Flortrol of the central Appenine sector while ence, the outskirts of which great city the

Eighth reached soon after the capture of shoddy, perhaps the deliberate sabotage Arezzo. By the end of the first week of it. contractors. The fiercest struggle Aug. Brit. troops held that part of Floring the battle for the Gothic Line was for ence which lies S. of the Arno, but great care was taken in their use of heavy weapons to avoid damaging historic buildings, and this retarded progress. The Gors., however, soon abandoned their loudly-proclaimed pretence of keeping loudy-proceeding processes of keeping Florence as open the and already all the bridges across the riv. except the Ponte-vecchie were wrecked by the Fourth Parachute Div. At the end of Aug., however, the Gers. had been forced back into the the Gers, had been forced back into the Gothic line and Polish troops were in Pesaro on the Adriatic and engaged in bitter fighting against the Ger. First Parachute Div. kighth Army infantry and tanks had now crossed the R. Poglia and were strongly attacking the Gothic line. The campaign entered a new and significant phase in the opening days of Sept. with the Gothic line broken along a 20 m. front in the Adriance sector, a general advance of the Eighth Army's front, the capture of Pise, and an advance by the Fifth Army across the Arno. The breaching of the Gothic line by the troops of the Eighth Army was an outstandingly de-cisive victory rull darms, in which Brit., Canadian, Polish, It., and Indian troops had all taken part since the attack stretch of that line from Pesaro inland was the most trusted Ger. defonce work outside Germany uself and was intended to form one of the main buttresses of

Hitler's fortress of Europe.

The capture of Rimani—The Gothic Line overcome.—Rimin, E. pivot of Kesselring's position, tell to the Eighth Army on Sept. 22 after one of the stiffest battles sept. 22 areer one of the sciences batters that Army had had to fight in the course of its long advance from Egypt. The battle of the Gothe Line and of the Apennines ended when First Gk. Mt. Brigade and Canadian tanks captured the deserted and anct. city of Ravenna, while the Brit. and Empire forces further inland were driving over the last foothills of the were griving over the last roomlis of the Apennines to reach the Marcchith R., which runs from Arezo to Rimini, and thereby to render the city untenable. In front of the Alles now lay the Lombardy Plain, with the Po valley stretching out beyond. The Eighth Army were now within striking distance of the Via Emilia, historic road along the Po valley to Robustia. toric road along the Po valley to Bologna toric road along the Po valley to Bologna and Placenza. In these operations two Gor, divs. had lost most of their effective strength, while losses far heuvier than those they had suffered at Cassino had been inflicted on the First and Fourth Parachute and four other divs., including the crack Twenty-Sixth Panzer Div.

Ten days relentless attack against the Gothic Line defences in the central sector had left those defences a shattered mass of Tubble and battered fortifications. The Gothic Line could have been the most formidable artificial defensive system the formidable artificial detensive system the first that so far encountered. But its defects were that it was overlooked from the S. and lacked depth. Moreover, the destruction of the Ger. Army of the allied offensive on the It. Front to compass the destruction of the Ger. Army of the destruction of the Ger. Army of the allied offensive on the It. Front to compass the destruction of the Ger. Army of the allied offensive on the It. Front to compass the destruction of the Ger. Army of the compass the destruction of the Ger. Army of the compass the same to have each of the compass the same that the compass the same to have each of the compass the same that the compass that the compass the same that the compass that the compass the same that the compass that the com

the high ground which commanded the timini gap; while the fighting for Gem-mano. Croce, Sansovino, and Coriano proved to be some of the bloodiest in the proved to be some of the bloodiest in the hist. of the Brit. Army. Ger. reinforcements to the extent of five divs. were rushed up in the hope of saving the Gothic Line. Gemmano changed hands ten times. Then Gen. Leese, commanding the Eighth Army, pushed the Canadian corps into the gap between the sea and hills without waiting for the lills to be cleared. The experiment succeeded. While the Canadians drown on to canture While the Canadians drove on to capture San Fortunato ridge overlooking Rimini San Fortunato riage overnousing rimma and the Marecchia valley, the sorely-tried Brit. Home line regiments, in a magnificent riposte, carried Croce and Monte Colonto. The Ger. abandoned most of their prepared positions and retired to the N. slopes of the Apennines, where they are all carried by the humanous reads. were well served by the numerous roads of the Po valley, leaving the Allies to maintain forward communication through the rough trails over the ints. The Ger. the rough trails over the ints. The Ger. left flank was covered by a great depth of defensible riv. lines.

Ravenna and Faenza captured by Allies -- Surio, Senio, and Santerno Rivers crossed. After this series of successes there followed a long lull, broken a month later when the kighth Army advanced between the Via Emilia and the coast, driving the Gers, back to the Suvio R. Six weeks later Ravenna was entered by the Canadian unit, Princess Louise's Dragoon Guards, in a brilliant encircling movement which forced the Gers. to withdraw to avoid being trapped. Then twelve days later, on Dec. 17, after highly constructive to avoid the construction of the construc effective operations in which ten. Frey-berr New Zealanders played the chief part, the Eighth Army captured Faenza and carried the allied line nearer Bologna. But the lull was resumed and four months elapsed before the Allies struck again in Italy, though in the meantime they rendered valuable service in holding down rendered valuable service in holding down twenty-five well-equipped for days, at a time when the Allies were carrying out their great attacks on the W. and E. Fronts. From the Allied viewpoint the main difficulty in Italy lay in the nature of the country. The Fifth and Eighth Armies had advanced northwards over nits, across rivs., and through defines a terrain pseuliarly adjusted for defence m terrain peculiarly adapted for defence, and they had never at any time had a sufficient superiority in numbers and equipment to enable them to schieve a equipment to enable them to achieve a decisive success. For, as the demands of other fronts grow, the lt. theatre of war had to take a subordinate place and for about four months, owing to wintry conditions, it had been quiescent. The co-ordinated attack on Germany from the S. may be said to have begun on April 10, 1945, with the appring of the

Austria
The Senio R was crossed on a wide
front in the vicinity of Lugo, N of the
Rimini Bologna highway A day later troops of the Lighth Army, now under Lt Gen McCreery, were across the R Santerno in strength and at once encount ered strong resistance Other troops landed from Lake Comacchio in the rear

of the enemy positions
The final Allied Offensure launched—
Fall of Bologna and Modena—Po crossed.

link up with the Allies in Yugoelavia and Castel san Pietro, on the Via Emilia, was Austria the in on April 17 and pushed on NW towards Bologua, by passing Argenta, ext day the Argenta gup providing the sole practicable route for mobile forces W of Lake Comacchio, was brought under But control with the capture of Argenta on the evening of April 18 and the ad vance of the Brit. troops towards Bocca kone and lerrara I rom I occaleone to lake Comacchio the Gers had their last and toughest defence line, a continuation



Canadian Army Photo

A CANADIAN SKI TRAIN IN THE HALIAN MOUTIAINS

The Allied offensive was soon extended to the kifth Army under ten Mark Clark the lighth Army, was preeded b, air blows on a formidable «ale by both strategic and tax tool for forces Phe offensite was led by the lenth Amer Mt Div which was from and well equipped for its arduous task of overcoming this rugged Apennine sector the Fighth had now roseed the Siliaro R which runs parallel with the Santerno hridgeheads being w u on both sides of the Rayuna Bologna road The Gers he aght up re inforcements and there was heavy fighting at Bastia a key position on the Havenna Ferrara road They made despetate efforts to hold the vital Argenta gap but the Brit forces pressed on and estah another bridgehead across the Sillaro Huge bridgehead across the Sillaro Huge the Allied spring offensive Thus the allied bombing raids were made on a Allied now stood inside the gateway to the score of targets S of Bologna in support Po plain With Fifth Army troops close of both the Fifth and Eighth armies.

of the vain gloriously named 'Gonghis khan line along the R Idice designed to cover the approaches to the Po But alreals the Lighth Army had shown superb skill in crossing rives held by some of the best troops in the Wehrmacht in formid-able natural positions strengthened during the winter months with all the ingenuity and thoroughness of the Ger High Commind Following a week of heavy fighting through mountainous country S W of Bologna Amer troops entered the Po Valley W of Bologna on April 20 cutting the Via I mills between Bologna and Modena. Bologn t fell to S Africam of the Fifth and Poles of the Eighth Armies on April 21, Amer forces advancing 20 m beyond in pursuit of disorganised Ger formations. Bologna was the first great objective of the Allied spring offensive Thus the the Allied spring offensive Thus the Allies now stood inside the gateway to the Po plain With Fifth Army troops closcloser to Ferrara the full power of the Moditerranean Alhed Iactical Air force was turned on the Gers retraiting across the Po villey, with devastating effect and on April 21 the Alhed armies reached the Po A ceaseless attack was maintained throughout the night against enemy columns on the roads and against ferry and pontoon crossings of the Po from Mantua eastward to the Adriatic Allied air force sustained the attack through the following day Bridges across the Alige 5 L of Verona and at I dua wice bombed and trucks and locomotives destroyed Next day there were important developments that twenty four hours after they had reached the riv (April 21) At the same time three great cities of N Italy fell to them Spezia important navailesse on the guilt of (area 1 Modeina a big communication centre 2 m N W of Bologna and 1 criais another communication point 3 m S of the 1 o Already over 40 000 prisoners had been taken by the two armies

Americans capture Verona and Genca — With the Amera well across the Po th Gers became horoughly disorganized and their resistance at their resistance at the Po and tough a flourishing countryside almost unscarred by war. The almost complete absence of blown bridges a ross the Po and of shall riven buildings showed how precipitate had been the Ger retreat. Pringing the Po by pontoons was a laborious task owing to the steepness of the bank and the delay involved in dragging heaving to the steepness of the bank and the delay involved in dragging heaving to the steepness of the bank and the delay involved in dragging heaving to the steepness of the bank and the delay involved in dragging heaving fell on April 26 to the Amera who thin crossed the Adige near the city. It was in a pitiable state, one third of its buildings being destroyed or damaged by allied bombins, and ince wricked when the Gers blew ip all seven bindges over the Adige before the Amera reached it cense was occupied by Amera Niest troops on April 27 It partisons having previously select control of a large part of the city and facilitated the entry of the troops. The patriots in fact now controlled much of N. Italy. Amer armour advancing along the Via Limila from Parma cap tured Placeuza midway between Parma and Milan.

Milan entered—Mussoline executed by Italian partisans—At Leoco, in the hill above (onto Mussolini was arrested on the same day by customs guards while he was trying to escape into Switzerland (Next day the ex Dime and twelve members of his Fascas' (abinet were executed by the partisans, who carried their bodies to Milan for public display just before the Fifth Army entried the city (April 29). The bodies of the executed baselsts were exposed in a square where fifteen partisans had been shot a very previously.

had been shot a year proviously London troops in Venice—I with Army across the Advie near Padius — Proops of the 68th (London) Div entered Venice on the evening of April 29 The Allied advance now swept rapidly across the N of Italy liberating Bergamo, Bresola, Vicensand Padua, while, as mentioned above.

the Amers entered Milan In this swift movement the kifth and kighth Armies drove through the enemy a strong defensive Adige line forcing the Gers back to the i side of the Brenta A whole Ger. Infantry div surrendered to the Bradilian expeditionary force Negotiations were now in progress for the surrender of the Ligurian army commanded by Mirshal Girliani who was now a prisoner in all d hands I fighth Army forces near I thus crossed the Adige in face of great lift culties the crossing being a major engine ring i at on account of the fast flowing an I swollen current of the riv and the destruction of all bridges

German armies dis nanised—Furn entred—By the end of April the liberation of all Italy was nearing completion. It is described by the end of April the liberation of all Italy was nearing completion. It is described by the end of the property of the light of the ligh

Italian parisans in control of northern maintenance of it parts and forces which, in turin and Milan, did not wait to be liberated but struck timely and powerful blow realist the Nazi and I asoist forces, greatly contributed to the enemy a dofeat and disorganisation. The liberation of Milan by the combined efforts of the Committee of National Liberation and partisans represented the oulininating effort of the resistence move-

ment, which during the previous year had | of Carinthia and Styria. ment, which during the previous year had been organised to a high degree of efficiency; and what happened in Milan and Turin happened also in Genoa and in nearly all the big cities of Lombardy and Piedmont. The result was that the greater part of the industrial equipment of N. Italy—factories, toundries, power stations, and hydro-electric plants—were preserved intert in so for as it was unpreserved intact in so far as it was un-damaged by alifed hombing. In the case of Milan abortive negotiations had been in progress for two months between the Committee of Liberation and the Ger. and committee of interation and the Ger. and Fascist authorities, with the object of ensuring that the Gers. should not wreck factories when they withdrew. Hence, when the Fifth Army crossed the Po, the Committee decided that the time had Committee decided that the time had come to put into action plans prepared for a general insurrection, with the object of seizing control before any harm could be done. The Gers, had no fighting troops in Milan at this time, and the Fascist militia of 100,000 men were unreliable and soon yielded to the partisans. Sporadic fighting continued for a short time but soon the committee of liberation was in control and had taken over the adminiscontrol and had taken over the administration of the city.

These events were the prelude to the total collapse of Ger. and Fascist resist-

total collapse of Ger. and Foscist resistance in Italy and their unconditional surrender to Field Marshal Alexander.

Unconditional surrender of tierman and Fascist Armics.—Long negotiations preceded the unconditional surrender of the Ger. and Fascist forces in Italy. They actually began as early as Feb. and most of what took place was without the knowledge of either Hitler or Himmler. The allied offensive, which began on April 9, was not affected by these negotiations, but doubtless in its turn it expedited the decision finally taken by the pedited the decision finally taken by the Gers. to surrender. On March 19 there was a conference near Locarno in Switzerland between two representatives of Sir Harold Alexander's staff and Gen. Karl Wolff, seulor 3.3. officer of the Ger. forces in N. Italy, at which the Allied officers told the Ger. general that Field-Marshal Alexander was interested only in getting authorised (ler. representatives to Caserta authorised ter. representatives to Caserta to accept unconditional surrender. Even-tually, on April 27, Wolff and two Ger. plenipotentiaries arrived in Switzerland and were brought by allied aircraft to Caserta next day. On the morning of April 29 the Gers, were told that either they must surrender unconditionally or the negotiations, which had been begun the previous day, would end without further delay. The Gers. then accepted the Allied terms for the surrender of their entire forces under Col. Gen. von Vietinghoff-Scheel's command to Field-Marshall Alexander, Allied Supreme Com-mander, Meditarranean. The instrument of surrender was signed in Caserta Palsoe, near Naples on April 29, the terms to be effective from noon, May 2. The ter. of the Ger. 'South-West Command' included all N. Italy to the Isonzo R. in the N.E. and the Austrian provs. of Vorari-N.E. and the Austrian provs. of Vorariberg, Tirol, and Salzburg, and portions ent feature. They were introduced into

The enemy's on carintina and Styria. The enemy is total forces surrended numbered over 900,000, the combatant troops of which fielded the remnants of twenty-two fier, and six It. Fascist divs. The terms involved the unconditional surrender by the Ger. commander of all forces under his command or control on land, sea, or in the air and the immediate immobilisation and air and the immediate immonusation was disarmament of enemy forces. It was also provided that the instrument would be superseded by any general instrument of surrender imposed by the United Nations and applicable to Germany and Abelian armed forces as a whole. The the tier, armed forces as a whole. The surrender of so much ter, which allowed the Allies to advance without opposition to within 10 m. of Berchtesgaden, hopelessly compromised the so-called 'south-redoubt' founded on Bavaria, to which the tiers, on the W. and E. Fronts intended to fall back after their forces had been split in two by the junction of the W. Allies and the Russians on the Fibels and Western Front in the Second World War.) The total number of Ger. prisoners taken by the Allies on the It, front before the end of hostilities was 230,000.

The New Zealand Div. occupied Trieste

on May 2, Gen. Freyberg accepting the surrender of the Ger. garrison. New Zeuland forces also occupied Gorizis. The zenna orces also occupied Corizia. The presence of Tito's and other Yugoslav troop- in part of Trieste and elsewhere within Italy's R. borders was, however, provocative of awkward territorial and political questions. Troops of the kighth political questions. Troops of the Eighth Army on May 7 crossed the It. frontier into Austria at a point N. of Udine This movement of the Eighth Army was now linked up along almost its entire course from N to S. with the line of the Russians' movement to the W. By the creation of this line a boundary was set up which marked the limit of Brit and Russian operations. This line ran from Liezen, buffy any between Klogendurt and Linz operations. This line ran from Liezen, half way between Klagenfurt and Linz, through Judenburg, Koflach, 15 m. W. of Graz, and thence due S. to the Yugoslav frontier. See G. Carr, Today—Haly the Tarpl., 1943; W. B. Kennedy-Shaw, Long Range Desert Group, 1943. C. Buckley Rond to Rome, 1945; A Moorehead, Ectipes, 1945; H.M.S.O., The Report by the Supreme Allied Commander, Meditary of the Supreme Allied Commander, Meditary of the Medical States of the States of t ranean, to the Combined Chiefs of Staff on

talean, to the Communication of the Haliam Campangm, 1948.

Italiam Greyhound, see Greenhound.
Italiam Music, see ITALY, Music,
Italic Dislects, see LATIN LANGUAGE.

Italics, letters of it, origin, said to have been an imitation of the hand-writing of Petrarch. They were introduced by Aldus Manutius of Venice in the sixteenth Aldus Manutus of venice in the exteents century for the purpose of printing his projected small ed. of the classics. The cutting was entrusted to Francesco de Bologna. The caps, were square Rom. letters, but the small letters, sloping to the right, were designed to initate handwriting, even containing a large number of tied letters. Although 1. are not closed to each other in modern printing. joined to each other in modern printing. the ligatures or connecting lines at the beEngland in 1524, and are used to distinguish words, sentences, or sometimes such portions as introductions and prefaces which do not properly belong to the work. They are generally used for unassimilated foreign words occurring in Eng. text, for quotations, and for words requiring special

emphasis.

Italo-Abyssinian War (1935-36). conflict arose out of what was known as the Wal-Wal incident. A dispute between Ethiopians and Its. over the ownership of scattered wells in a sandy desert had led to fighting between it, and Abyssinan forces on Dec. 5, 1934 but, in its wider implications it was, or became, the focus of the international relations of the greater part of the world and, indeed, it would not be untrue to say that it was the virtual beginning of the Second World War in 1939.

It. claims to spheres of influence in Abyssinia, first made towards the close of Abysima, are made towards the close of the previous century, were nullified by Gen. Baratteri's signal defeat at Adowa (Adus) in 1896 at the hands of the Autharans, which resulted in a treaty signed at Addis Ababa recognising Abysiman independence. This disaster always makled in It., and one of Muscolini's motives in going to war was that of re-venge as well as to outshine the glory and complete the work of the Risorgmento. An Angle It. accord of 1891 had recognised the It. zone of influence over almost nised the It. zone of influence over almost all modern Abyssinia, but this and later agreements and treaties were superseded by still later agreements, and the whole position was governed by a tripartite treaty between Great Britain, France, and Italy (1906), the terms of which were largely determined by the Italo-Ethlopian Treaty of 1896 (see Abyssinia). But de-spite this settlement, it. foreign ministers had always schemed for the recovery of It. Influence, and these aspirations naturally influence, and these aspiratious naturally grew more marked after the conquest of Tripolitania and Libya, thus holding out the hope of a vast it. empire in N. Africa. the nope of a visit it. empire in N. Africa. Abyssinia, however, confirmed her independence by being admitted, with the strong support of Italy, a member of the League of Nations, whereby it became the duty of the League to assist the Ethnopian Corr set that it much days to the the strong the str Gov. so that it might develop the country's economic resources and improve the social welfare of its people. In 1935, how-ever, Mussolini charged the Ethiopian Gov. with failing to fulfil its special obligations as a League member, particularly in respect of arms traffic and slavery, and indeed, he made no secret of his intention to invade the country. The League on deavoured to stay his hand by setting up a committee to consider how to promote assistance for Abyssinia so as to secure administrative reform and economic development. The 1t. Memerandum of Sept. 22, 1935, in reply, called attention to the internal conditions of Ethiopia, and demonstrated the existence of an essential demonstrated the existence of an essential distinction between the countries of the anot. Amharic stock and the outlying recently-conquered areas, averring that the Ethiopian rulers had so exploited these areas for their slave trade that they

presented an urgent case for It. intervenpresented an urgent case for It. intervention and that, in any case, the authority of the Negus (Emperor) did not extend to such areas. The Committee then proposed certain territorial adjustments in Abyssima in favour of Italy in the vicinity of the Somaliland coast. Britain offering Zeilah (a port in Brit. Somaliland) to Abyssima by way of compensation. But the It. Gov. rejected these overtures and contended that Abyssimia was true when the It. Gov. rejected these overtures and contended that Abyssinia was incapable of respecting international agreements of any kind. It was now too late to stop the It. irvasion, but the League, faced with the necessity of implementing the muchadveitised Covenant (see Covenant of Fife League of Nations) now proposed to put recomming saudious into overstion. to put economic sauctions into operation against Italy as an aggressor State, and restrictions on trade with Italy were enforced six weeks after the invasion began. This naturally only served hopelessly to embitter Anglo-It. and Anglo-Fr. relations with out producing the desired result, and the next diplomatic move was the morally still worse Laval-Hoare plan for 'ex-change' of ter., which, in reality, was a one-aded transaction whereby Abyssinia was being called upon to make the sacri-fices and Italy invited to do the taking, and which contained an equally one-sided and which combined an equally one shoot proposal for a 'zone of economic expansion and settlement.' The League reported the plan, and the question which now came before it was that of oil sanctions of deaths step which Mussolini now came perors it was that of on same-tions, a drastic step which Mussolini and Italy would regard as an unfriendly at. The situation seemed the more grave from the very fact that the Brit, fiecd in the Meditgranean and the forces in Egypt had been greatly augmented, while the Fr. Gov. had agreed, in the event of an It. attack on the Brit. fleet, britain was not in a position to enter on a major war. 'Collective action 'was on its trial, but no prominent member of the League was anxious to make the first move, especially as the U.s. gov. declined to take any part in the move. Moreover tension in Europe generally increased by reason of Hitler's denunciation of the Locarno treaties (q.r.), a factor which, it was feared would have ropercuscions on the Abyssman war, Italy being a guarantor under those treaties. Peace feelers were now thrown out by the league, to which Italy returned an evasive reply, while Marshal Radoglio intensified he efforts to crush the Abyssinina forces before effective negotiations could thwart Italy's victory. The negotiations, howover, were not continued and soon afterwards hostilities coused with the fall of Addis Ababa in May, 1936.

Military Operations.—The It. invasion was launched on Oct. 3, 1935, Mussolini's war aim being to unite the hitherto solated It, possessons, Somalia and Entrea, by conqueing all or part of the intervening and ina pendent kingdom of Abyssinia. Hence he delivered his attack smultaneously on two fronts, though the only obvious objective, apart from the psychological import of capturing Adowa, was the railway, Abyssinia's sole route for imported supplies the campaign the war was waged in two separate zones, a N zone on the Abys sinian platoau, and a S E zone in the Gallaland Somaliland region including the Ethiopian ter of Ogaden The N zone presented the more formidable task, zono presenta the more formidante task, for the general altitude was 2000 ff and the country was ridged and knotted with a series of canyons deeply cut by water courses. The It advance followed the road taken by Napier in 1865 and by the defeated It expeditionary force in 1995 whice ever than those adopted by Graz along the F escarpment from the March

But during most of highlander, the It achievement of over-ar was waged in two running the country in seven months was, by the light of previous military experience no mean one, even if it was destined to ank into the commonplace after the brilliance of the Brit conquest of It E Airica under Gen Cunningham six years



(1 soul I ress

MARSHAL DE BONO AND HIS STAFF AT AN OBSTRVATION TOST

P to Addis Ababa thereby avoiding the anyons and also the scoreling discom-forts of the Danakii Desert in the Rift Valley It was indeed the only prac-ticable routs for other and caser routes were fre luded by jungle and chirate In the 5 F zone the general confirmation of the Gallaland Somaliland argion some what favoured the invader because the what favoured the invader ickness the outer (st upment hampered supplies and troops going to Harar from 1) redaws on the Diriuti Addis Ababa tillway, nor was the invader opposed by either precipiess or torrontial rains. But the Scommander Graziani (q t) had to cross commander Graziani (et) had to cross and he only an open surf driven show on which to land supplies and a desolate country, to their the Ogaden a region devoil of any to vegetation other than scrub and yielding superior but seamty water Though the aeroplane battles and armoured car conferred great ad adapt (vantages over the ill-equipped Ethiopian) warfare

spraying of liquid poison gas from aero plate even more than the dropping of extle ive and incendary bombs, seems finally to have broken the morale of the Abysundan people behind the front, as well as that of the forces in the field By the time Badoglio resorted to gas on a large scale the Abyasinian troops on the N front had already learned the art of conceilment But the phosgene was deadly because it deprived the Abyssinians of the cover that nature had provided for of the Cover that nature had provided for them the bushes and forests being drauded with gas that clung to the woods and fields and valleys for days on end Moreover, the Abysinleans were not true to their traditional genius for mobility, and in face of an enemy whose overwhelming superiority in armaments made pitched battles hopeless, they failed signally to adapt themselves to effective guerilla

Gen. de Bono began three operations | simultaneously: an assault on Adowa, which was taken within a few days; an advance southward through Tigré; and and advance from Musa Ali near the Danakil Desert; while (traziani advanced through the Ogađen to menace the Harar plateau and the rollway from the S. But the Musa Ali operation dwindled away and Graziani's advance came to a standstill early in 1936. After four months he was little further advanced than when he started. Had the Abysinians at once exhausted thomselves in massed attacks the It. advance at this stage would no doubt have been much more rapid. Bande of Abyssinians from the Tembien mts. and Amhara carried out unexpected successful attacks, these regions not being included in the it, plan of campaign. Early rains, too, helped the Abyssimians; and the carlier air taids falled to impair the morale of the people. Moreover, It, hopes of detaching from Hallé Sclassié (q.v.) not only taching from Hallé Sclassié (q.v.) not out the recaletrant Tigrean Races, but also the grievously-oppressed non-Ambaran subject peoples, such as the Danakli, Somalis and Gallas, proved ill-founded for the most part, though the Wallo Gallas turned against their Ambaran overload and their disaffection had some influence on the war in the N. zone at its most critical states. critical stage.

Throughout the campaign the It. mum the casualties in the ranks of the It troops, as much as possible of the lighting being left to the airmen, tanks, and armoured cars. It infantry had to be armoured cars. It infantly had to be used, the hand to hand bayonet fighting was imposed mainly on African natives—Efficean conscripts and Somali or Librar mercenaries. The total death-roll was It, troops of African race, 1593; It, workmen, 153; It troops of It, race, 2313 of which number at least 1000 died of accidents or sickness. The Abysinians could mobilise a million men; but the could mobilise a million men; but the Imperial Guard, trained by European officers, only numbered 30,000 of the total. and even these had had only the most elementary training in W. methods of war fare. The rest of the forces were feudal levies raised by local chiefs, lacking training in modern weapons. It is be training in modern weapons. It is be lieved that they had no more than 100,000 modern rifes, about 500 machine-guns, and no artiflery. When the advance began Grazian had only two divs, at his dis oralism and only two dive. at my divergence of the it. forces, for political reasons, being concentrated in Eritrea mainly with the view of wiping out the ignominy of Adowa in 1896,

and advanced on Adova, while their planes raided that the and Addi Grat, the latter being occupied next day. A little registance was met between Addi Grat and

throughout Italy. The absence of effective opposition from Ras Seyum lent plausibility to the It. propagandist version that their invasion was in the nature of a praceful occupation of a countryside, whose people were easerly awaiting liberation. During the halt after Adowa It proclamations were issued announcing, inhr alia, the abolition of slavery and the suspension of customs tolls. As a result detections of inhabs, during the first fow weeks were on an extensive scale. The weeks were on an extensive scale. The most notable desertion was that of Dejazmak Hallé Sclassié Gugsa, governor of the E Tigré and son-in-law to Hailé Selassié, the Emperor, who is said to have bitterly resented the appointment of Ras Seyum to the command in the Tigré, and de Bono rewarded him with the appointment of Rus of the Tigré.
On Oct. 15 a deputation of priests

handed to de Bono the keys of Arum, the hely city of Abyssinia, which, according to tradition, still held the Ark of the Covenant, brought from Jerusalem by the Queen of Sheba. When the next general move forward began on Nov. 3 towards Mikalie, 35 m. distant, neither Ras Seyum nor ites Kassa of Amhara offered any opposition; but it took the Its five days to over the journey, heavy rains complicating their transport problems. There now ensued another prolonged pause for road construction and consolidation of ground occupied. But this tardy mode of campaigning did not please the It. gov. or Italy and de Bono was superseded as High commissioner and Commander-in-chief by Marshul Badoglio, Chief of the It. teneral staff, and the most distinguished It soldier of the time. Time was of the essence of the campaign, for the League had just then decided to impose economic sanctions on Italy as an aggressor, and de Bono's Fabian tactics were unsuited to the altered conditions. Badoglio soon showed that the invasion was the reverse of a peaceful colonial enterprise, and he made no effort to conciliate the mha ss. of the occupact zones, an attitude what a selector events proved, heralded the adoption in March of the next year of the policy of nuclifulness. On Dec. 8, the Its. occu-pied Abbi Addi, cap of the Tembien, a of rusped heights, cliffs and ravines which the its, never really succeeded in combing or morphing up. Elsewhere on this front the it. forces consisted of little more than scattered outposts.

By Dec. the Abyssman forces had been strengthened by the arrival of Ras Mulugeta, War Minister and an Adowa veteran, with deta huents of the Imperial courd. The first really serious engage ment of the war on the N. front began on out the ignominy of Adows in 1989.

The Campaign in the North.—At 5 A.M. toward. The first really serious engagement of the war on the N. front began on Oct 3, 1930, the first detachments of ment of the war on the N. front began on the It forces in Eritrea crossed the March | Dec. 15 on the It, hight, where Abyssinian advanced on Adowa, while their detachments from the forces of Ras Imru, and crossed the Takgovernor of Gojjam, had crossed the Tak-azze riv. in an attempt to turn the It. dank. The Hs. were driven back 15 m. Adows, but on the morning of the fith, and the Abys-linens, pressing hard upon when the Its. entered Adows, they found that the forces of Ras Seyum, Commander in the Tigre, had retreated during the night. The capture of the tn. was, howinght. The capture of the tn. was, howinght. The capture of the tn. was, howinght. The capture of the tn. was, howinght in reoccupying Abit Addi at a heavy loss and gained control of the Adows-Makalle road, thus leaving their foe in a dangerous this sector, regained most of S. Shre by the end of the year. They also succeeded in reoccupying Abbi Addi at a heav y loss and guined control of the Adowa-Makalle schient at Makalle, with the prospect of the May rains precluding any further advance. But Budglio had made good use of the pause in constructing roads and in re-organising his forces. When he took the initiative again he proved the equal of his foe it mobility and much his superior in strategy and in armanicuts. In the second week of Leb 1936, he alvanced twith a speed which surpassed all expectations and which he maintained till the end if the mobility of his forces not being affected to any extent by rain Several expectations and which he maintained till the first tenglish and sources and labour corps. Early in the previous month Mulugeta occupied Amba Aradam a mt 12 m S of Makalle thereby blocking the way to Amba Alagi and supporting Ras kassa and Ras Sevum in the Temblen. Then followed a five day battle in the Temblen (Jan 19 23). There were repeated attacks and count is attacks by both sides particularly at the Warleu Pass, N of Abbi Addi, which was held by It Blackshitts.

were massing their forces in order to con test any further It advance tactics which were certain to play into the hands of their scattered the It use of artillery and air bombardment was much restricted. The battle of Amba Aradam (Feb. 11.15), fought in most intricate country was a disastrous defeat for Mu'ugeta who did not foresee that Badoglio would attack on both flanks and so surround him By Feb 15 Ras Mulugeta and the remnant of he of the state of the results of the remnant of the remnant of the same were fighting the results of the resul little doubt that Vulugeta's d cision to hold Amba Aradam was the turning poin in the fortunes of Abvasinia for while the It advance could have been checked, it is evident that the defeat of the Imperial Guard accelerated the Abyssinians' dis-The First It Army (on 4 their morale cantions advance on Amba Alagi a strong natural position whi h was held in considerable force, but owing to the treachery of the suborned Gallas and other tribesmen the flanks of the loyal Abyssinian tribesmen forces were left exposed and the position fell on Feb 28 Meanwhile the Third Corps moved west wards and secured control of the main line of communication from Desaye the Emperor's hadquarters, to the Temblen The force of Ras Kassa and R is Seynin numbering 30 000 men were now thus al numbering 30 000 men were now thus armost entireled from the S by the Third Corps, from the N F by the Eritrean Corps, which had been guarding communications from Makalle, and from the N.W by both the Second Corps based on Axum and the Fourth Corps of new rein forcements. The Abyssinians were driven out of their fortified posts after fierce fighting and beavily bombed as they re treated to the fords of the Takazze Ras Kassa and Ras Seyum, with the remnant

resume their agric pursuits—made their way southward and, later joined up with the Imperor's forces near Lake Ashangi. The Second and Fourth It Corps now converged on Ras Imru in S Shire, using a good deal of polyon gas. The Abyssin ins field across the Takazo with heavy loses. The way was now open to heavy losses The way was now open to Badbello for an advance towards Lake In and by mid March the Its had cross d the Takazze combed' the comen massif, and entered Walkait are the Setif R. At the same time an It column of 5000 men left Asmara in 10 m tor vehicles to make a lash on Gendar They reached then goal over 0 m of difficult terrain in two weeks. but an ountered no resistance On April 12 the It flag was hoisted on the N shore of I ake Tana and in (hallabat The First and Third Corps were also rapidly advancing S towards I ake Ashangi, while the Third Corps was moving from Abbi Addi towards Sokota an important junction. The main Abveshitan aimy, under Halle Selasue hinselt was posted near kworsm S of I ake Ashangi. The emperor had left Dessye and come N in the hope of rallying his forces. But the m tale of the Abveshitan was orumbut encountered no resistance On April the male of the Abysenians was crum-bling a net the terrible waspon of mu tart gas, dropped in containers or spray d from aeroplanes over soldiers and civilians indiscriminately and over the undergrowth in which they sought a lat despetate stand against the Its advinging on Lake Ashingi and on Sokota toy a la the end of March Anticipat ing Badoglio s pincer movement the with 20 000 men and attacked the First It Corps at Mal Con above the lake (Mai h 31) The Abyssinians displayed grid gallantry but as haw been seen, pitel I battles were hopeless against not a Turopean forces. The fight man is the fifth pitel the typismians holding their ground against gun and air bombardment with forlorn tenacity, finally decing in disorder to Dessye, bombe I by aircraft along the road Some of the I mperor s own secretaries and closest collaborators were in the pay of the Its is is borne out by the accuracy with whi h the Its were able to forecast the Fupror's moves and send bombing planes wherever he went in an attempt to kill him. The persistence with to kill him The persistence with which they attempted to get rid of the I m; for and the eventual results of his deputure from the scene justify the view that the whole I thioplan structure de-pends I on him personally and would collapse if he were killed or temoved Desaye, occupied on April 15 now became occupic i on April 15 now Builogh a headquarters Dur During the month Addis Ababa was often visited by It planes. No bombs were dropped, but the machine gunning of the aerodrome and the tales of defeat brought by stragglers from the battlefields deepened the gloom of the though the action. of the inhab, though they still seem to have entertained hopes of assistance from the League of Nations. When that hope

vanished, a proclamation was issued calling on all males to report for military service. On April 30 the Emperor returned to his cap together with Ras Kassa and other generals, just after the Its. had succeeded in piercing the S. defences. The failure of the Emperor's appeal for recritis on May I. coupled with attacks on rainte of the Emperors appear on cruits on May 1, coupled with attacks on his life by his subjects turned brigand, broke his will to further resistance. He had already arranged for the Empress and his family to leave the country, and at the last moment he decided to accompany them. One of his last orders was that his palace should be thrown open in order that the people of the city might take its contents. The result was a vulgar orgy contents. The result was a vulgar orgy (May 2-4) of looting, rioting, and burning, which involved more than five hundred deaths, including some foreigners. It was not until Marshal Badoglio made his triumphal entry into the city on May 15

that order was restored.

The Campaign in the southern zone.— The The Campaign in the southern sone.—The chief objective of the army on the S front was the occupation of Harar but Graziani was hampered by the smallness of his forces and his long lines of communication based on Mogadishu and Bandar Qasin 'i. main body of the Ethiopian army in the S was concentrated round Harar and Jijiza under Dejazmak Nasibu. Dolo, near the Kenyan frontier, was occupied at once in order to hold Ras Desta in check. By the end of Oct. the whole of the region between the Webi Shebeli and the Fafan. S. of Gorahel, was in It. possession. The of Gorahei, was in It. possession. The fall of Gorahei (Nov. 7) was due largely to air raids, and this nan a decoder.

effect on Abyssinian morale. But on
Nov. 11, the Abyssinians won a con
siderable action at Anale, 30 m S of the
important Abyssinian post of Dagga Bur,
bushing a number of It tanks. This air raids, and this had a decidedly adverse defeat, coupled with the rains, led to an It. withdrawal all along the line, while Ras Desta, litherto inactive, began an ad vance on Dolo so as to divert it. attention from their drive northwards. In mid Dec. the main body of his troops were located by aeroplanes 150 m. N.W. of Dolo. An air attack took place near Negelli and Dagga Bur was bombe devery day. The ensuing pause enabled Graziani who had made a leisurely descent from the highlands on Grazian's rear, delayed over-long in country where his enemy could make the best use of his modern armament and transport. But despite gallant rearguerd actions, the attacking Somalis, Askaris, and It national troops proved too much for them and they were finally roated by It. tanks in the rear and they were similar roated by It. then subjected to aerial bombardment in their headlong retreat into the Sidamo footbills. Mechanised It. detachments arrived in Negelli, 210 m. from their starting-point, on Jan. 20. This victors and the occupation of Negelli, besides removing the threat to his flank and to his communications, allowed Graziani to ad vance northwards as soon as weather and other conditions permitted. Moreovér, Adriatic, Its greatest length, measuring the advance was a valuable political set-

off to de Bono's delays in the N. campaign: and though it was not strategically paign; and unough it was not strategreally of much importance, if fully served its political purpose. Graziani now spent his time in consolidating his hold over the country between Dolo and Negelli. When, at the end of the month, the It, advance the second of the Abrestians had seed to be a was resumed, the Abyssinians had greatly strengthened their defences before Jijiga and Harar with deep entreuchments, redoubts and machine-gun posts, which system of defences became known to the Its. as the Abyssinian ' Hindenburg Line. Its, as the Abyssinan innernous Line. Both these the, were heavily bombed from the air with incendiary and explosive bombs, though Haiar had been prochained an open th. The Its, now advanced up the valleys of the Webi Shebeli and the Fafan, and by April 27 they were in possession of the Abyssinian 'Hindenburg Line.' There was, however, fleree fighting near Sasa Baneh, both sides suffering heavy lossos and Graziani had to call a halt, owing to the exhaustion of his men. The Abyssinian position, however, threatened as it was in the rear with a possible attack by the It army in the N. was hopeless in any case, and till more so if they delayed too long in the 'Line.' On April 29 Sasa Baneh and Bulale were On April 29 Sasa Banen and Busine were captured by Graziani after desperate tighting, the occupation of these two places marking the final collapse of the Abvasimans in the S. The further progress of the It. troops was checked by heavy rains, but by May 8, they reached Harar and by their arrival saved the city from the locating and burning that had from the looting and burning that had marked the abandonment of Addis Ababa.

Later, Hailé Selassié went to Djibuti and sailed for Palestine. Soon afterwards the It gov. announced that Italy had annexed all Abysqinia and made Victor Emmanuel

all Abyssinia and made Victor Emmanuel its Emperor. Five years later, following the brilliant Brit. campaign in R. E. Africa, Hailé Selassié re-entered Addis Ababa as Emperor. See further under ITALIAN EAST AFRICA CAMPAIGN IN (1940-41) and WORID WAR, St. OND. See G. A. Rossi, I. Diret in Ditalia Oltemaro, 1916; Affurs, 1935, Italy, Documents relating to the Dispute between Ithoppe and Italy, 195 Cmd. 5014; A. J. Toyubec and V. M. Boulter, Abyssinia and Italy (vol. n. of Survey of International Affairs, 1935), 1936. E. W. Iolson-Newman, The Har in Abyssinia, 1936; M. H. Macartney and P. Cremona, Italy's Forcian and t donal Policy, 1914-1937, 1938; Christine Sandford, Ethiopia andir Itale Schassin, 1916.

Italy, republic in the S. of Europe, compilsing the peninsula which extends sonthwards from the Alps Into the Mediter.

wards from the Alps into the Mediterranean Sea, together with the is, of Sicily, ardinia, Elba, and various small is. The Aips form a semicucular barrier which separate it from the continent of Europe, from France on the N.W., Switzerland on the N. and Austral on the N.E. its boundary on the W. is that portion of the 710 m., its breadth ranges from 354 to 20 m., having an average breadth of about 90 m. The total area of I. was estimated of the total area of 1. was estimated (1945) at 310,000 sq. km or 119,660 sq. km of which 100,480 q. m. are accounted for by the mainland, exclusive of Sicily (1935 sq. m.) and Sardinia (9299 sq. m.). N.I. is cut off from the rest of the peninsula by the Apennines, which branch sula by the Apennines, which branch off from the Maritime Alps E. of Nico, and run in a S.E. direction from the guif of Genoa to the Adriatic Sea. The range then turns more to the S. near Ur-bino, and extends as far as Capo Spar-tivento in the 'toe' of the peninsula, thus forming the backbone of Central and S. I. It is convenient to consider the peninsula under these three divs. : N., Central, and S. N. I embraces the provs. of Liguria (Riviera of Genoa), Pledmont, Lombardy, Emilia, and Venetin, including the Tren tino. Lying between the Alpa and the upper Apennines is the wide plain which form the basin of the Po. This is that in all round from Mentone to the gulf of all round from Mentone to the gulf of Trieste by the towering Alpine wall, called from W. to L. the Maritime, Cottian, Graian, Pennine, Helvetian, Rhatian, and Carnic Alps. The highest point is the Grain Paradiso (13,652 ft.), a peak of the Graian Alps. The loftiest auminits of the Alps are not included in It. ter. To the S. of the Alps, in the N. of Lombardy and Veneta, lie the beautiful It. lakes, Lago di Garda, Maggiore, Como Lugano, and Venetia, he the beautiful it. lakes, Lago if Garda, Maggioro. Como Lugano, and Orto The tertile plain of Lombardy, as already mentioned, is watered by the Po, which rises near Monte Viso, and is enriched on its way to the Adriatic by numerous tribs, and mt. torrents. The prov. of Venetia, to the N. and E. of the Po, is traversed by the Adige, Brenta, Plays and Taghamento. Along the coast Plave, and Tagliamento Along the coast of the Adriatic, N and of the Po delta, there exist large tracts of salt water, known as lagoons, in a flat and marshy dist. They are separated from the sea by narrow banks of sand in which are inlets, so that the lagoons serve as harbours. The chief of these is that on which Venice is stuated. It extends over nearly 10 m from Torcello in the N., Chloggia and Brondolo in the S. The W coast-line of N. I. is formed by a myrow strip of land, closed in by the steep abrupt rocks of the Appennines, and known as the It. Riviera.

Geography.—The geography of Central and S. I is mainly determined by the Apennine range, which, sloping across the head of the pennsula as well as down its length, extends for about 750 m. The culminating point of the border range between N and Central I. is the Monto Cimone (7110 ft.) The Apennines in Central I. The Apennines in Central 1. are broken up into many short lenges, particularly in Tuscany. The chief peaks are Monte (atria (5590 ft.), Monte della Sibilia (7663 ft.), Monte Vettore (8128 ft.), and Pizzo di Sevo (7945 ft.), while the culminating peak of the whole range is Monte Corno (9577 ft.) in the Gran Sasso d'Italia. Central I according to the woneral div. Central I.. according to the general div., comprises the five provs. of Tuscany, Rome, Umbris. Marches, and Abruszl. The first named is watered by the Arno,

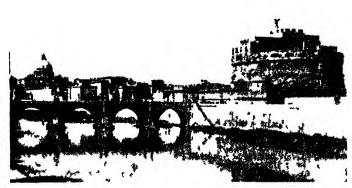
Cocina, and Ombrone, all rising in the Etruscan Apennines and flowing into the Tyrrhenian Sea. But the most important riv. of Central I. is the Tiber, the riv. of Rome, which is navigable for 90 m. The chef lakes of this region are the Lago di Colano and Lago Trasimeno, while the Lago di Bolsena, Lago di Vico, and Lago di Braschue converte the return of extinct di Bracciano occupy the craters of extinct volcances. The volcanic tract extends from the Monte Amiata (5890 ft.) in Tus-cany to Vesuvius (nearly 4000 ft.), a detailed and active volcano in Campania. On the W. the Aponnines slope down to the Pontine marshes, S. of Rome which is connected with the Terra di Lavoro, the plan of Campania, and on the E. to the broad Apullan plains. The prove of S. I. are Campania, Apulia, Basilicata, and Calabria. The main ridge of the Apen-nines is continued due S. by the Monte della Maddalena, culminating in the Moute Pollino (over 7000 ft.). The low Monto Pollino (over 7000 ft.). The low hills N. of the Gulf of Taranto, between the 'heel' and the 'toe' of I., are of Pllocene formation, while the Calabrian Hills are a broken limestone range where thing are a broken innestone range wines the height rises to 6000 ft in La Sila, a densely wooded granite mt., the highest peak being Aspromonto (6420 ft.). The rives of S. I are not of great importance, The Garigliano those in a westerly direction with the mile of the table of the state. to targrish olows in a westerly direction into the gulf of flacts, about 15 m. from the mouth of the Volturno. The Sele is a short river flowing into the gulf of Salerno. The chief rivs which flow into the gulf of Taranto are the Agri, Vasuate, and Bradano. The rivs, of the the Foglia, Metauro, Frino, Chienti, Tronto, Sangro, Trigno, Biferno, Fortore, Cervaro, and Ofanto. The coast-line along the Adriate is practically unbroken but for the properties. but for the promontory of Gargano. The is of I.—Skilly, Sardinla, Elba, the group of Lupar Is N of Skelly, Giglio, Capri, etc.—are dealt with in separate articles. The harbours of the Adriatic are Venice (pop. 303,200), Ancona (90,000), Brindial (42,000) Borletta (46,000), and Bari 303,200), Ancona (90,000), Brindisi (42,000) Burletta (16,000), and Bari (197,100); the large harbours belong to citics of the W. shore (Jenou (pop. 619,300), Spezia (111,700), Leghorn (123,700) Civita Vecchia (23,100), Naples (99,000)—and in the S is the ine harbour of Taranto (180,800). The cap. of I is Rome (pop. 1,573,900), and its prin. inland that are Turin (702,000), Muin (1,270,000), Verona (162,900), Muin (1,270,000), Verona (162,900), Modena (112,700), Bologna (279,200), Florence (331,300), Pisa (67,000), Lucca (79,100), Slena (47,815) Perugia (137,500) and Potenza (16,000)

(timate.—The climate of I, is in general hot, but is tempered by the long coast-line, while on the uplands it is cool and pleasant. There are great differences in temp. and atmosphere between N. and S. I. The plain drained by the R. Po has the nost extreme cold, while the It. Riviera enjoys a warm, sunny climate all the year cound.

Riviera enjoys a warm, sunny climate all the year round. The Adriatic coast is ex-posed to biting N.E. winds, but Tuscany and Rome, and the greater portion of the

W, half of the peninsula, enjoy a mild winter and have a very hot summer. The rainfall during the summer months is alight but there are heavy rains in late autumn. A large portion of I suffers from malaria, the chief areas so affected including the same field in one than the chief areas so affected including the same field in one ing the marshes of Grosseto and Orbetello
the Rom (ampagna, the Pontine marshes,
and the dist between the guil of Manfre
donia, and the guil of Taranto Efforts
have been and continue to be made by the
gov to mitigate the evil by improving the
drainage and by combining agricultural

been reaped from the same field in one year The vineyards occupy about 11 000 000 ac or one third of the total cultivated area. Over a thousand milituated area. Over a thousand milituated area. Over a thousand milituated yearly. The chief it wines for export are the Sicilian Marsala, the Piod montese Vermouth, and the chianti produced in Tuxany. The numbers of live stock are uncreasing and the large nudges. improvements with hygienic advantages
(ultivatum, klara, etc.—In the N
plains of I no plants and trees thrive of milk in the country gives rise to a large



THE DOME OF "T PHIR" AND (RIGHT) CAMILI MANE ANGLIO (FOMB OF HADRIAN

which cannot endure the trests of winter Along the Rivera of Cenea the climate is extremely fivourable for the growth of olives our ges Lunons, dite palms, and altron trees which are also found in great profusion in the 5 the mulberry begrown extensively in Tuscany and else where, and there are many analysing of the lower slopes of the Apendines. In sugar cane (otton plant, prickly pear pomegranate all flouish in the warmer regions in the forests and on the mi sides are found the chestnut, express laured sides are found the chestnut, vpress laured myrtle, of ander, arbutus, and evergreen cak. Agriculture is the chief industry of the country about 70 per cent of the total area of 1 being under cultivation. The principal corn crop is wheat mearly rand certain wares and incoming under cultivation are the manufacture of thread, cotton wood chemicals, integriss and incoming a design of the manufacture of the area of 1 being under cultivation from the large that industry and certain wares and industries are the manufacture of all industries are the manufacture of

The best known varieties n lum cheese the Cheese are Gorgonzola's racoltino and Paimesan. A great variety of fruit is grown-orange, tenoor figs peaches, appears and prickly pear. Ulmonds are ding and hazel nuts p stachles walnuts, where, and there are many vineyards on an i chestnuts are among other products the mulicry tree i cultivated on account of its leaves which serve as food for ni worms. The breeding of silkworms is of importance in the provinces of Lom-bardy Picdmont and Chetia, where silk

sulphur, zinc, mercury, coal, iron, and lead. The production of coal is unimportant, and its use is largely replaced by water-power and electric-power gonerated from water. The growth of industry is due to the latter. Under the Fascist regime the commercial and industrial policy was directed towards the developpolicy was directed towards the development of irrigation and drainage, land reclamation, application of agricultural research, reafforestation, building of houses and roads, anti-malarial campaigns, etc. In the fishing industry only the sardine and tunny fishing is of importance. The chief imports are foodstuffs, coal, iron, hides, rubber, and silk-cocoms. The chief exports are fruit (dried and tresh), wine, olive oil, hair, straw hats, worked coal, raw silk, cotton tissues, and silk tissues. tissues.

Communications.—The construction of railways dates from 1839, when a line was opened from Naples to Portici (5 m.). Now there are two main lines running the entire length of I. along both sides of the Apennines and connected with the lines of the N. plain, together with numerous minor lines, the total length, including the lines in Sardinia and Sicily, being (1939) 11,500 m. The main lines (11,000 m.) are under State control. The electrification of railways has been carried out in recent years, and by the beginning of the Second World War over 3000 m, of public and private line were electrified, excluding the electric tramway system, which covers electric transway system, which covers nearly 3000 m. Before the war there were some 2000 electric locomotives and 2500 steam locomotives. By the end of the war this number was reduced to 400 and 800 respectively with a corresponding and our respectively with a corresponding decrease in the number of serviceshie coaches and wagons. The total mileage of roads is (1940) 127,000 m., of which 13,500 m. are State roads. Telegraph lines cover some 42,000 m., and there are 10,000 telegraph offices with 11,000 post offices. The prin. canals are in the valley of the Po. connection Milan to the Po. offices. The prin, canals are in the vancy of the Po, connecting Milan to the Po, Adda, and Ticino. The delta of the Po is so much obstructed with sand that navigation from the sea to the riv. is carried on by means of the three canals, Canale Bianco, Po di Primaro, and Po di Volano. The mercantile marine included (1939) 2300 salling vessels of 100,000 metric tons, 1060 steamships of 1,600,000 metric tons, and 300 motor ships of 380,000 metric tons. The total tonnage of the mercantile fleet was over 3,000,000 metric tons in 1939. By the end of the Second World War this was reduced to 500,000 metric tous, chiefly fishing vessels; in 1916 the tonnage of sea going vessels (123) was

Population.—At the first general census (1871), taken after the unification of the kingdom, the pop. was 26,801,154. In 1881 it had increased to 28,459,628, and in 1901 to 32,965,504. In 1910 the pop. was estumated at 34,947,865, and in 1921 at 38,7 ic,433. Under the l'ascist régime strenuous efforts were made by the gov. to keep up the birthrate and celibacy was

census to 42,993,602; and was estimated in 1947 to be 45,646,000 (excluding Venezia in Giulia and Zara), an increase of 2,652,000 over the 1936 total. Accordof 2,652,000 over the 1936 total. According to this census the population was distributed among the regions as follows:—Lombardy, 6,298,000; Veneto, 4,654,000; Sucily, 4,356,000; Canupania, 4,175,000; Piedmont, 3,580,000; Canupania, 4,175,000; Piedmont, 3,580,000; Aprilla, 3,277,000; Calabria, 2,006,000; Aprilla, 3,027,000; Calabria, 2,006,000; Abruzzi e Molise, 1,687,000; Likuria, 1,506,000; Marches, 1,352,000; Sardinia, 1,196,000; Venezia Giulia e Zara, 977,257; Umbria, 780,000; Venezia Tridentina, 689,000; Lucania, 543,362. For the pop. of tns. see above 543,262. For the pop. of the, see above under Geography.

Government.-Formerly a constitutional monarchy I. was declared a republic as a result of the referendum held on June 2, 1946. The Constituent Assembly consisted of 556 deputies, elected by popular suffrage at the General Election also hold suffrage at the teneral election also noun on June 2, 1946, and was then the sole legislative body. The Senate which existed under the monarchy was abolished. The Constituent Assembly which came into existence for a period of one year, later extended to eighteen months, then assumed the task of framing a republican

constitution.

The new constitution was passed by the Assembly by 453 votes to 62 on Dec. 22, 1947 and came into force on Jan. 1, 1948. The first Article describes I as 'a demo-cratic republic founded on work 'and emcratic republic founded on work and emphasies the constitutional sovereignty of the people. Parliament consists of the Chamber of Deputies and the Senate. The Chamber is elected for five years by universal and direct suffrage, on the basis of one deputy for every 80,000 inhabs. Deputies must be at least twenty-five years of age. The Senate is elected on a regional basis, seek perion having at least six senators, one for each 200,000 inhabs. (the Valle d'Aosta has one senator only). The President of the Republic, who is himself a senator by right and for life, can nominate six senators for life from comment men in the social, scientific, artistic and literary spheres. The Presi-dent is elected in a joint session of the two houses, to which are added three delegates from each Regional Council (one from the Valle d'Aosta). A two-thirds majority is required for election, but after three in-decisive scrutinies, an absolute majority is sufficient. The President must be at least lifty years of age and his term is seven years. The President of the Senate acts as his deputy. The President is empowered to dissolve the chambers of Parliament, except during the last six months of his term of office. The defeat The defeat months of his term of office. The defeat of a gov, bill does not involve the re-signation of the gov., which can be com-pelled to resign only on a motivated motion of censure. For administrative purposes I. is divided into nineteen itegions, each Region being sub-divided into provs, and come. The organs of the Regions are the Regional Council, the Junta (executive), and the President of the Junta. A cov. compassioner superpenalized. In the 1931 census the total Junta (executive), and the President of had risen to 41,176,671; in the 1936 the Junta. A gov. commissioner super-

vises and co-ordinates the regional ad-Sicily, Sardinia, Trentino-Friuli-Venezia Giulia and ministration. Alto Adige, Friuli-Venezia Ciulia and Valle d'Aosta have been granted special statutes of autonomy. A Constitutional Court, consisting of fifteen judges—five each being appointed by the president, Parliament in joint session and the Supreme Law Court—has rights similar to those of the Supreme Court of the U.S.A. It is empowered to decide on the constitutionality of laws and decrees, define the powers of the State and Regions, adjudicate on conflicts between the State and Regions or on inter-Regional conflicts, and try the presi-dent of the republic and the ministers.

The reorganisation of the Fascist party is forbidden. Members and descendants of the House of Savoy are excluded from all public offices, have no right to vote or to be elected, and are forbidden to enter to be elected, and are infinited to the state. Titles of nobility are no longer recognised, but those existing prior to Oct. 28, 1922 (the date of the Fascist march on Rome') are incorporated as

part of the name.

Defence.-- Under the Fascist regime military service was compulsory and uni-versal for men between the ages of 21 and 35. The army was divided between the Metropolitan Army with a normal peace time establishment of 200,000, and the Colonial troops. At the beginning of the Second World War a million and a half men were mobilised including 132 battalions of the Black Shirt Militia, normally part of the Voluntary Militia for the National Security (M.V.S.N.). The Cara-National Security (M.V.S.N.). The Carabinieri, or military police, numbered over 50,000 in 1939. The navy with a personnel of 4000 officers and 75,000 men consisted, in 1939, of 6 battleships, 20 ornisers, 52 destroyers, 63 torpedo boats, and 90 submarines. The battleships of and 90 submarines. The battleships of the Littorio class had a standard displace-ment of 35,000 tons and carried 9 litteen-in., 12 six-in., and 12 three-point-five-in-guns. The air force, including army co-operation units and the naval air arm, mustered 2000 first-line aircraft in 1939 with 400 reserves.

with 400 reserves.

Under the provisions of the Peace Treaty (1947), the army is hmited to 250,000 men, to include the Carabineri with a strength not exceeding 75,000 The 35,000 ton battieship Italia (formerly Lattoria), and the Vittoria Veneto, the 33,000 ton battieship finite Cesare, 7 cruisers, 7 destrovers and other vessels were surrendered to the Allies. Eight submarines were also surrendered, and the remainder destroyed. The post-war navy consists under the Peace Treaty of two 23,000 ton battleships, 5 cruisers of not more than 7000 tons, 4 destroyers, 15 torpedo boats, 20 corvettes and mine-sweepers. The total strength is limited to 25,000 officers and men. The air force including the naval air arm is limited to 200 fighter planes and 150 planes of other types. with a maximum personnel of 25,000. Bombers are forbidden under the Peace Treaty.

Finance.—Under the Fascist regime the taxation system and the lovying of is fortunate in its univ. life. There are

taxes were simplified. To maintain family fies and encourage capital, death duties were abolished while, for many transitory taxes, more permanent sources of revenue were substituted. Among sources of revenue were substituted. Among sources of revenue other than taxation and excise and customs are state monopoles, state railways, and stamp duties 1. entered the Second World War with an internal debt of 200,000 million lire and a defleit of over 12,000 million lire, of which 5700 million were in the ordinary budget and 6500 million were extraordinary accounts, the military extraordinary accounts, the military extraordinary accounts. traordinary accounts, i.e., military exigencies and the development of the empire. At the end of the war the in-ternal debt stood at 850,000 million lire. For the fiscal year 1946-47 the deficit was 610,000 million lire, and for the following vear revenue was estimated at 520,000 million life and expenditure at 832,000 million involving a deficit of 312,000 million.

Education.—Education, controlled by the State, is under a minister, assisted by a council. Primary education is free and a council. Prinary cancation 14 free and compulsory, and the state also maintain-partly or wholly, secondary, technical schools, and the universities. Education was the primary concern of the Fascist gov, and the education theories of Prof. Gentile were put into practice. Under his system, educational programmes were had down, but the teachers were free to arrive at the results therein determined by their own methods. There was, how-ever, no departure from Fascist principles, which were further inculcated through the youth organisations, the Bailla for boys from the ages of five to fifteen and the aranguardisti from fifteen to eighteen. The subservience of education to the Fasent state was completed by the so-called School Charter (Carta della Scuola) of 1939, education of women was discouraged and co-education forbidden. With the overthrow of Mussolini education was freed and enabled to return to its liberal The reorganisation of educatradition. tion was one of the most difficult problems in 1 in 1945. Owing to some extent to the outbreak of war the School Charter had mover really been operative, and school life had subsequently become thoroughly disorganised, partly on account of a lack discremised, party on account of a lack of teachers, and party owing to the de-struction of numerous school buildings in the war. With the restoration of peace it was found possible only to allot one school-house to two schools, so that each applications of the schools are the schools. pupil had only half a day's education from the state. Often the political party organisations provided lessons and, with the co-operation of U.N.R.R.A. (q.w.), a meal during the hrs. left free. This linking of politics with social relief was a dangerous inheritance from fascism but it was essential to seek relief where it could be Among reforms most discussed in found I. today are the extension of elementary cleasical secondary-school education. I.

over twenty univa, most of them supported by the state Many are of very anot foundation. The univa of Bologua, Genoa, Macerata, Napica, Padua, and Perugia date from the thirteenth century, and those of Eurara, Pavia, Pisa, Rome, and Siena from the fourteenth. When the end of the wai brought the students back to the univa these became more over-rowded than ever before. Thus, in the academic year 1943—46 there were nearly 32,000 at Rume, 20 000 at Milan 12 000 in rum, 11,000 at Bologua and 10 000 at Bari.

Religion - The Rom Catholic Church is re organised as the State (hurch, but toleration is granted to all creeds Over 97 per cent of the pop is Rom (atholic By the Act of 1871 the rank of the pope as a sovereign prince is accognised, the Vatican and Lateran palaces and the papal villa at Castel Gandolfo having the privilege of exterritoriality Chiz cleav privinge or exterritorially limit class age between Church and State had hin dered the un fication of I, and under the monatch, the Rom Question was a source of political difficulty. But on Feb 11 192) Muscolin signed a treaty. a concordat and a financial convention with Cardinal Gasparri the papal secre tary of state for Pope Pius XI. The law of Papal Guarantees was abolished, and the pope recognised the It kingdom under the Savos dynasty Rome being the cap the Vatican was maintained and the Peter's and the Vatican palaces became The sovereignty of the Papacy over can City (qv) In the summer of 1931 another rupture occurred between Church and state over the nature of the Azione Cattolica but an agreement was arrived at on Sept 2 The pope also has juite at on Sept 2 The pope also has juris diction over the Latran, the Palvzo della Cancellaria, the residence of the Cardinal Vicar, and the Papal Villa By the concordat, the right to appoint It bishops remained with the Holy see but newly appointed bishops were to take the oath of allegiance to the king. By the financial convention, I paid the Holy see 750,000 000 lire together with a per cent bonds to the nominal value of 1,000,000 lire

In the newly formed republic, the post in of the papacy was not defined until the passing of the construction of the 22 1947, though before that date a strong body of catholic opinion was in favour of renewing the concordat in the new constitution. In the result to treaty of the 1929 we confirmed by art le 7 of the constitution, laying down that the Catholic Apostolic Rom religion is the only ningen of the state. Other creeds are permitted, provided always they do not prot spinciples, or follow rites contary to public order or more il he haviour The profession of such creeds i free, and discussion on religious matters is freely admitted in practice, however, protestants labour under many disabilities. The appointment of archibishops and bishops is made by the Holy See, but before proceeding to such appointments the Holy

See submits to the gov the name of the proposed appointee in order to obtain an assurance that the gov will not raise ob jections of a political nature (atholic religious teaching is given in elementary and intermediate schools Mariages may be solemined before a Catholic clir, man in accordance with the rules of canon law, or before a clergyman of any other religion admitted by the state Mariages on also be concluded before a rgistiar Peligious statistics of the 1931 census show Rom Catholics, 31 011,000 Protestants, 83,600 Jews, 74,300 atholics or of no telligion, 17 000

remus show Rom Catholics, 11 014,000 Protestants, 83,600 Jews, 74,300 atheists or of no religion, 17 000 History—The name of I was, until 9 Bc, Conlined to the narrow S. extromity or toe of the peninsula the dist lying between the gulfs of Squillace and huphemia During the republic the word was applied to the whole country S. of the Aramune, and ultimately was made. of the Appinines and ultimately was used to include the whole of the peninsule. The cirly hist of I is insparable from that of I to insparable from which is dealt with in a separate article. Under the wise administration of Augustus I was for the first time dealt with as a whole and its unification thus gradually took; la e Rom rule of the Jennsula continued up to a p. 476 when Odoacer leader of the Herulian mercenaries deposed the young Romulus last Augustus of the Wempire and placed the kingdom under the rule of Ano, the By intime emperor Odoacer, who had been pronounced patrician by the emperor and king by his soldiers ruled in I until he himself was conquert and deposed in 495 by Theodorn was a wise and just ruler and chose his ministers from among the Rom pop At his death (225) Belisains and Narses sent by Justinian, invaled and reconquered the country. In time dealt with as a whole and its unifica invaled and reconquered the country 265 the Lombards who had been employed by Narses as mercenales swept down upon I from the N under the leadership of their king Alboin Pavia was cap of their king Alboin. Pavia was captured iter a three veus siere, and made the ij of the new kingdom. The Lombat is spread >, and formed the two duchs so specific and Benevonto, but lake I the strength to occupy Rome, Ravei ha Venice the is of Sicily, Sardinia and Corsi a, and the important sea thas Their rule was very oppicissive until Gregory the Great (590 (04) converted them to othodown and artabilished Rome them to orthodoxy and established Rome as the rallying point of the whole nation In 756 the Lombards were defeated by Popular by the bombards were declared property of the popular and sovicifies in Romagna and spok to, which he will died to the popular unding the temperal soversignty of the 1 on Church. The conquest of the Lombards was completed by Charlemagne,

Lombards was compited by Charlemagne, topin a son, who deposed his father in law Desiderius the last Lombard king, in 771 and was crowned imperor of the Roms in 800 by Pope Leo III.

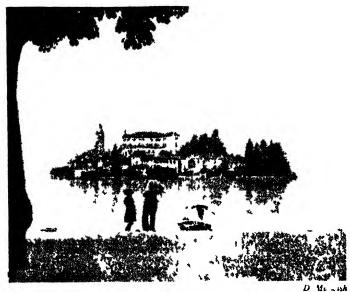
The cities and Sicily still remained under the rule of the k. emparor, and were undisturbed by the I rankish conquest of the N. The Carolingian line ended in 888 with the deposition of Charles the Fat. The following seventy-four years was a

pctiod of misrule and anarchy Before the end of the ninth century, hordes of Saracens began to overrun Sicily, Calabria, and Apulia while in the tenth century the Before and Apulla while in the tenth century the plains of Lombardv were laid waste by the invasions of Magyars and Northmen The Ger King of Saxony, Otto the Great, was called in by the enemies of Berengar who was tered to pay tribute and acknowledge Otto as his oxiolord After this the It king was more impotent than ever, and in 962 was deposed I being now considered as a firf of the Ger empire

the gradually increasing power of the commune, a word first used in connection with Milan the citizens of which city had united in a parlamento

united in a purlimento

The 'axon policy of interference in the
papal election was followed by (onrad's
successor Henry III, who, finding three
popes in Rome, abolished them all, and
bestowed the see on a feer bishop of his
own choosing During the minority of
his son Henry IV, who succeeded him in
10 f Archdeacon Hildebrand of Soana,
straysorid Pone (progray VII, three) his afterwards Pope Gregory VII, threw his



LAKE ORIA IN PLEDMONE AND IN INIAND OF S. GIULLIO I I in the fourth century The church on the island wa.

About this time, when I was a divided country, governed by foreigners from a distance the Lombard cities of Villan the voke of the termined to throw off distance the Lombard cities of Villan the voke of the termined to throw off the voke of the termined to the voke of the ter

to rise in power and to gain some degree of independence. The saxon emperor encouraged this spirit of municipal independence which crushed the power of the turbulent counts. His son and grandson, Otto II and Otto III, however, had not his powers of discipline, and on the death of the latter in 1002 Ardom, Marquis of Ivrea, claimed the crown and was supported by Lombardy and Pavia. The saxon dynasty, however, continued in Henry of Bavaria, who gained the alliance of Milan, and crushed her rival, Pavia. On Henry's death in 1024, Heribort, arch bishop of Milan, offsted the Crown to Conrad, the Franconian king of Germany During this century there should be noted.

elections.

During the ensuing three decades the N. cities were each a single republic; the bishops were superseded by consuls, who, assisted by a council of burghers, adminis-tered the law. Rome shook off for a time the sway of its bishop, and under Arnold of Brescia estab. a republic with a scuate on the lines of anct. Rome. On the death of Courad, his nephew Frederick, surnamed Barbarossa, was elected emperor. Under his rule the old feud between emperor and pope was renewed. He crossed the Alps in 1154, determined to exercise his immerial rights and to nut an end to the the Alps in 1134, determined to exercise his imperial rights and to put an end to the warfare of the cities. Milan at once rose up in arms against him, but Frederick, after laying waste some smaller cities, marched on Rome and was crowned by Adrian IV. (Nicholas Breakspear), the only pope of Eng. birth. He marched upon Milan and forced it to surrender But in 1159 Milan was again in revolt, and after a lengthy siege was laid waste (1161). Later, united in one league, called the League of Lombardy, against their foreign ruler, they built a new city, which they named Alessandria, after their staunch ally Pope Alexander III., whom Frederick had driven from Rome in 1167. Alessandria withstood a siege during 1174-75, nad criven from Rome in 1167. Aleasandria withstood a siege during 1174-75, and in 1176 the allied forces inflicted a crushing defeat upon Frederick at the battle of Legnano. In 1177 the emperor made terms with the pope for a six years' truce, and in 1183 a permanent peace was retided but the treate of Countering. ratified by the treaty of Constance, which granted to the Lombard tos. the right of war and self-gov. During the short reign of Frederick's successor, Henry VI., the strife between Guelphs and Chibellines broke out in I. In Germany it had stood for a quarrel between two rival dynasties, for a quarrel between two rival dynasties, but in I. the Guelphs represented the papal party, i.e. Rome and the League of Lombardy, while the Ghibellines stood for the imperial party. On Frederick's death (1190), Henry laid claim to the whole of I. and the two Sicilies, his claim being acknowledged in 1191. During his son Frederick II. slong minority, the power of the pope extended as far as ('onstantinopie at the time of the fourth Crusade (1198–1204). The spoils of war vero shored with 1204). The spoils of war were shared with Venice, who had volunteered her fleet for the transport of men. Thus Venice be-came estab, as one of the most powerful commercial cities of the Mediterranean. In 1220 Frederick II, was crowned king and emperor, the virtual ruler of Germany, and emperor, the virtual rilier of Germany, I., the Suelies, and Jerusalem. He made a determined effort to clush the league and subdue the pope, but, the power pitted against him were too strong. Pope Gregory IX. excommunicated him in 1227, and Innocent IV. declared him dethroned at the council of Lyons in 1215. The Swabien line ended in 1266 and in 1273 Rudolph of Hausburg was grouped entertained. Rudoib of Hajsburg was crowned empers by the pope, and five years later and a public recognition of the pape's temporal sovereignty in the papal states. The Guelph party was now supreme in the N., but lost much of their influence in the S. when Sicily robelled against Charles of

abandoned his authority over papal | Anjou and placed itself under Aragonese trile (1282). At the end of the century the Guelphs of Florence were divided into two factions—the Neri and the Bianci. In 1300 Boniface VIII. called in Charles of Valois, who banished the latter faction and then undertook to manage the affairs of the republic. In 1309, the pope, Clement V., being a Frenchman, the seat of the papacy was transferred to Avignon, where it remained till 1377.

The period of nearly seventy years was marked by great commercial prosperity. The N. tns. still made war upon one another, but the burghers paid companies of adventurers, condotters, to do the fighting. The rural counts lost their power and became citizens of the tns., and the office of podesta was now practically that of a judge. In many tas, his place was taken by a new functionary, the captain of the people, who was a leader of Guelphs or Ghibellines, whichever party was in the ascendant, and whose powers, being ill-defined, tended to become unlimited. In the N, the popes lost their prostige as It. potentates by the removal of the Holy See to Avignon. Rome nominally obeyed her bishops, but the temper of the times was shown in the brief republic (1347-54) set up in the city by Rienzi on semi-classical, semi-feudal lines. The duchy of Milan was governed by the powerful Visconti dynasty till 1447. Under the powerful prelate Gian Visconti (d. 1351) the duchy conquered Genoa and a large portion of N. I. But in 1450 Filippo's son-in-law and general, Francesco Sforza, seized the Visconti's possessions with the and of his Florentine ally, Cosmo de' Medici, and proved himself to be a wise and liberal-minded ruler. Until 1343 Florence had been subject to an adventurous foreigner, Walter of Brienne, Duke of Athens. For the following hundred of Athens. For the following hundred years, with the exception of a short-lived revolution of artisans, the city was governed by an oligarchy headed by the Albizzi family. During this period Flor-ence achieved the subjection of Pisa and extended her domains in Tuscany. But the oligarchy was opposed to the wealthy and democratic family of Medici. In 1434 Cosimo de' Medici estab, a republic of which he assumed the presidency. He strengthened his position by making the adlance with Francesco Sforza mentioned above. The presidency maintained by Cosmo became a dictatorship under his randson, Lorenzo the Magnificent. The hist. of Venice was very different from that of the other great it, states. In the cleventh century the administration lay in the hands of the popular representative, the dogo. After a series of revolutions, however, the oligarchical principle was estab., and in 1311 the Council of Ten was formed. In the middle of the fourteenth century she began her struggle for mari-time supromacy, which ended in victory (1381). In 1406 Venice added Verona,

an It. prince, but the individual enjoyed | Modena and Genoa were placed under the liberty, and every encouragement was given to literature and art.

Peace lasted till 1991, when a new age opened for 1. Throughout the following century the country was a battlefield on which France and Spain fought out their quarrels and strove for new conquests. In 1494 Charles VIII. of France invaded In 1493 Charles VIII. of France invaled in Males I. at the request of Lodovico Sforza, who was auxious to become Duke of Milan. Charles, after having the Medici expelled from Florence, marched S. and was crowned in Naples In the meantime crowned in Naples In the meantime Lodovice assassinated his nephew, Gian Galcazzo, and rused Lombardy against Galeazzo, and rused Lomburgy against Charles, who with difficulty made good his retreat to France. The was was now opened to other invaders. In 199 Louis XII., the successor of Charles, subdued Milan, and in 1994 mytted the Emperor Maximilan to assist him in the conquest of Venice. In the confusion the papacy made a most determined and successful made a most determined and successful defonce against the foreigness. In 1508 was formed the League of Cambrai with France, Spiin, and Germany against Venice. But in 1512 the army under Gaston de Feix fought a fierce battle against the combine 1° p. Venetian, and papal troops on the banks of the Ronco about 2 m. from Ravenna. The Fr. were detective but Center all In the color about z m. from flavenia. The Fr. were victorious but Gaston fell in the act of pursuing the enemy. The Fr. returned in a few years. In 1515, their new king, Francis 1, was victorious at the battle of Marignano, and entered Milan, but in 1511. 1524 was expelled by the troops of Emperor Charles V. These devastating wars ended in the peace of Cambrai (1529), by which Charles V. was left in possession of I. In 1537 the Fr. took possession of the ters, of the dukes of Savoy, but these were coded to Philip, the son of Charles V., by the treaty of Cateau-Cambresis (1559). Venice, Genoa, Lucca, and San Marino were allowed to retain their independence

Until the end of the eighteenth century it may be said that I. now ceased to have a hist, of her own. Wars in which she had no interest, but was the patient sufferer, continued to be fought on her soil. Venice regained some of her lost power by the conquest of the Peloponnesus (1681), but conquest of the Petoponnesus (1981), but this was recaptured by the Turks in 1715. Piedmont was ceded by Spain to Em-manuel Pilibert, who regained Savoy and Mioc. The War of the Sp. Succession (1701-13) led to a redistribution of It. By the treaty of Utrecht (1713) and. By the treaty of Otrecht (1713)
Austria succeeded to the Sp. dominions,
and Sicily was given to Victor Amadeus,
duke of Savoy, with the title of king. In
1720 be had to yield that is, to Austria in
exchange for the kingdom of Sardinia. was subjected to a further redivision at the end of the War of the Austrian Suc-cession. By the treaty of Aix-la-Chapelle the end of the war in the constitution of Alx-la-Chapelle (1748). Milan, which had been captured by Austrians in 1714, was ceded with Tuscany to the House of Austria; the Bourbon, Charles III., was confirmed in his kingdom of the two Sicilies; his brother, Don Philip, was given the duchy of Parma; Piedmont and Sardinla remained in the bands of the House of Savoy; and hands of the House of Savoy; and and a republic was set up with himself

protection of France, to whom the Genoese surrendered Corsica in 1755.

For forty-four years I. enjoyed peace. Tuccany was ruled by lieutonants until the death of Francis I. in 1765, when his second son, Peter Leopold, afterwards Emperor Leopold II. (1790), was made grand duke. His rule was characterised by its agric, improvements, suppression of the Incustition, and whee reforms. He of the Inquisition, and wise reforms. He performed a lasting benefit to his subjects by draining the Val di Chiana. The rule of Mana Theresa in Lombardy was also

or Maria Theresa in Lombardy was also remembered as a period of internal peace. The chief event after the treaty of Aix-lin-Chapelle was the invasion of I. by the Fr. Republican armies in 1796. In the following year the Emperor, Francis II. was brored to sign the treaty of Campo Formio, by which Venice and the ters. N. of the Adam were given to America and of the Adige were given to Austria, and the rest of N. and Central I. was divided up into republies, such as the Cisalpine, Therine, Ligurian, Cispadane, and Par-thenopoun republics. The great cities were filled with a wild hope of liberty, but the soon discovered that their freedom was but nominal under the presidency of Nanolcon Bonaparto. In 1799 the Rus-suar troops gamed a victory at Trobia, and in 1800 Napoleon crossed the Alps and confirmed his previous victories at the battle of Marengo. The Claspine re-public was declared the Italian republic in 1802, and Napoleon was crowned King of at Milan in 1805, and in the follow-ing year he made his brother Joseph king of Naples. But at the overthrow of Napoleon in Paris (1814) the kingdom of I. crumbled to pieces, and at the Congress of Vienna (1815) the allies redistributed the country among themselves, but the pope was left in possession of the Papal States. The result of the Napoleonic invasion of

I was that the rule of the petty princes was more oppressive than ever, but national pride had been aroused and had given birth to a great hope for the future unity and self-gov, of the whole country. See ret societies, the most important of which was the Carbonari, flourished among the educated classes; risings broke out in the S. (1820); and in 1831 the flery young the S. (1820); and in 1831 the nery young patriot, Giuseppe Mazzini, organised a political society called Giovane Italia (Young Italy) for the emancipation of his country. Mazzini came to London, from which, by means of literature, he actively propagated his republican theories among his countrymen. The more moderate Liberals, as is shown in the writings of Leopardi and Foscolo, despaired of the future of I. In 1848, the year of revolu-tions, insurrections broke out in Lombardy, but the Austrians won the battle of Custozza, and placed the country under martial law. Popo Pius IX., who since 1846 had passed certain measures of re-form, was torn between his desire to support it, freedom and his foar of making war on Catholio Austria. His authority, in consequence, weakened daily; he was declared traitor, and fied in disguise to Gaeta. Mazzini hurried back to Rome,

and two others as triumvirs. In 1819 Charles Albert received a crushing defeat from the Austrians under Radetzly, and trom the Austrians under Radetzky, and abdicated at Novara, leaving his son. Victor Emmanuel II, to make the terms of treaty. Lombardy reverted to Austria, and a part of the Fiedmont. oe ter was also ceded. In the same year Leopold and Ferdinand, who had joined the pope at Gaeta, returned to take up the reins of gov. France decided to restore Rome to the pope and sent Gen Oudinot to beslege the city. He was defeated at Cruta.

against Francis II., the son of Ferdinand, and was assisted by Garibaldi, who won victories at Calatifimi and Melazzo Assuming the title of dictator, he entered Naples in Sept. 1960, krancis having fied. The united troops of Garibaldi and Cavour different the Paral Statest Cortains. defeated the Papal States at Castelfidardo. and the Neapolitans at the Volturno. and berdinand, who had joined the pope is lify and Naples were americal to Sarat Gaeta, returned to take up the reins of dinia in Oct., and (aribaldi hailed Victor gov. France decided to restore Rome to the pope and sent Gen Oudinot to besiege at the assembly of the first It parliament the city. He was defeated at Civita in Turin, Victor Emmanuel was decreed Vecchia by Garibaldi recently returned king of I, and Garibaldi resigned from his



W f bl incell

THE AFFTING OF GARIBAT DE AND VICTOR EMMANUEL Painting by Cirlo Ademolic

from exile in S. America The Neapolitans, augmented by 5p soldiers marched northwards, and were also defeated by Gartbaldi at Palestrina and Velletri, but The Neapolin spite of these successes the Fr troops succeeded in entering Rome, and the pope

returned in 1850 At this time almost of despair, Cavour came into prominence as the champion of the national movement In 1852 Victor Emmanuel appointed him prime minister The Gouta Nationale was formed, with the moto 'Unity, Independence and Victor Limmanuel.' The king and Cavour secretly encouraged the movement, though secretive encouraged the movement, though their only avowed aim was to expet the foreigner. In 1858 Cavour intered upon negotiations with Napoleon III which resulted in the outbreak of a Franco Austrian war (1859). In the same year the Austrians were defeated at Montebello,

dictatorship. In this same year Cavour died. Rome was still held by the pope and the Austrians were in possession of Venice. In 1862 Garibaldi raised troops to liberate Rome, but was defeated at Aspromonte, and Rom Catholic opinion throughout I urope was opposed to the annexation of Rum to the new kingdom fit troops had held that city since 1849 By the runco Italian Convention of 1864, the It agreed to ever unto Rome within the years on condition that the Papal States were recognised and the cap of I moved from Turn to Florence In 1 In 1867, in spite of the agreement of 1884, Gari-baldi made sev attacks on Rome and consequently Louis Napoleon sent back his troops, who deteated the Garibaldians negotiations with Napoleon III which resulted in the outbreak of a Franco-Austrian war (1859) In the same year the Austrians were defeated at Montebello. Prussian war, the It army under Gen. Cadorna, after a brief resistance entered wisional govs. were estab in Florence and Modena; and an insurrection broke out in the Papal States. S. Italy rebelled Plus IX., refused to abandon his temporal

difficult, owing to the great social differ-ences between N. and S. In 1878 Victor Emmanuel died and was succeeded by Humbert I. (b. 1841); Pins IX. being succeeded by Leo XIII. in the same year. Humbert's reign was characterised by electoral reform (1881) and foreign colonisation. Somaliland, along the N.E. coast of Africa, was acquired between 1880 and 1890, and the dependency of Eritrea was founded in 1882. I's claims to a protecfounded in 1882. I's claims to a protectorate over Abyssion led to war, which ended in an It. defeat at Adowa (1896), and the restoration of all land to Abyssiola by the treaty of Addis Ababa (1896). In 1883 I. joined Germany and Austria, forming the Triple Alliance, largely owing to her distrust of France. In 1900 King Humbert was assassinated by an anarchist, and was succeeded by his only son. Victor Emmanuel 111. At the beginning of the new century I. entered upon more friendly relations with France, the Triple Alliance being still maintained. In the dissensions in Marca. 1906-11 she gave her support to France against Germany her support to France against Germany while France acquiesced in It. ambitions in Tripoli. In sept. 1911 war broke out between I. and Turkey in connection with the rights and privileges of it, subjects in Tripoli. In Nov. of the same year the it. gov, formally proclaimed the annexation of Tripoli and Cyrenaics, which was rati-fied by Turkey in the treaty of Onely in Oct. 1912. The Ottoman Empire had hastoned to conclude peace with I, as Turkish supremacy was threatened in the Balkans by the Balkan Aliance. The triumph of the allies in the Balkan Wars (q.r.) was a setback to Austro-Ger. policy, which favoured Turkey, but despite I.'s sympathy for the Balkan allies, I. was again drawn into the Triple Alliance with Germany and Austria for a further period, renewed on Dec. 7, 1912. Austria, how-ever, disregarded the terms of her treaty with L in pursuing her Balkan policy of agression against Serbia. L was unable to intervene, being occupied in 1914 with a revolutionary movement which expressed itself in strikes and rioting. These difficulties were encountered by Salandra, who became premier in March 1914 on the resignation of (Hollitti (q.c.), who had been a virtual dictator for eleven years. After the declaration of war between the En-bents and the Central Powers. I. main-tained her neutrality, deening herself not bound by the Triple Aliance, the ferms of which Austria had broken by her sole action against Serbia. As the price of continued neutrality, I. demanded con-cessions from Austria in the Trentine, Istria, Dalmatia, and Albania. Although tained her neutrality, decruing herself not bound by the Triple Alikanes, the terms of which Austria had broken by her sole action against Serbia. As the price of continued neutrality, I. demanded concessions from Austria in the Trantine, Istria, Dalmatia, and Albania. Although Germany favoured these claims. Austria rejected all but a small extension of the Grand Lordier. Baron Somnine, It. Foreign Athinster, then opened negotiations with the Entonte, and finally on April 26, 1915, the treaty of London was signed, by which the treaty of London was signed, by which the final treaty of London was signed, by which the final treaty of London was signed, by which the final treaty of London was signed, by which the final treaty of London was signed, by which the final treaty of London was signed, by which the final treaty of London was signed, by which the final treaty of London was signed. · Istria, Dalmatia, and Albania.

sovereignty, and withdrow as a voluntary promised together with an immediate loan prisoner to his own domains, which were allowed the privilege of exterritoriality.

The consolidation of 1., since the formation of the kingdom, has been slow and properly equipped, while for the main offensions of the control of the contr poorly equipped, while for the main offen-sive launched on the Isonzo and for the operations in the Isonzo and for the opera-tions in the Trentino only some 100,000 men were available. (See Isonzo; ITALIAN FRONT, FIRST WORLD WAR CAM-PARIAN ON; WAR, FIRST WORLD.) Not until 1916 did I. become actively at war with Germany. As a result of Sonnino's foreign policy the unity and independence of Albana were proclaimed under the perof Albania were proclaimed under the pro-tection of I., while in April 1917 the Treaty of St. Juan-de-Maurienne was concluded with France and England, delimiting 1.'s share in the partition of Asia Minor. The treaty was confirmed at an Allied Confertreaty was confirmed at an Ained Conference held in London in Aug., and, following discussions there, an offensive was started on the It. front which resulted in the disaster of Capocatto (q.v.) in Oct. This defeat stiffened It. resistance and in June, 1918 the reorganised It. army defeated the Austrians at the battle of the Phinte and w. Oct. Austria small versus Piave, and in Oct. Austria sued for an armistics. At the end of the struggle the resurces of I. were exhausted, her losses in more amounted to half a million, and her great effort had reduced the country to a worse state than that of her allies. The fact, however, that for I, the war ended with a military victory encouraged a Nationalist movement, opposed to more moderate opinion in favour of an entente however I, and the succession states. The Astonalists demanded Flume as well as the territorial gains promised in the treaty of London. (See Flume.) The Addintic problem (see Admarte Question) was unsolved and It. disatisfaction with the Peace Treaty caused the resignation of the Peace Treaty caused the resignation of Orlando, who was succeeded by Nitt. Domestic unrest in I. was heightened by the feeling aroused over the Allied intervention in Fiume, following the comp d'ent of D'Annunzio (q.r.), who on "ept. 1919, occupied the city. The Adriatic Question was settled tentatively by the treaty of Rapallo (q.r.), whereby I. surrendered the Dalmatian coast but secured accordingly over Varse (ar.), this februar sovereignty over Zara (q.r.), thile Flume was made an independent state. It rewas made an independent state. It re-mained for Mussolini to reach a definitive settlement, known as the treaty of Rome, Jan. 1924, whereby Yugoslavia exercised control over Port Barce and the Delta and I over Finne. There also followed the hetune Commercial Agreements, but these were not rathed by the Yugo-Slav gov. until 1928.

Nationalists. A conflict with the gov. of various treaties and conventions became inevitable. In a speech on Sept. guaranteeing the integrity of Abyssinia, 29, Mussolini proclaimed his allegiance to hiussolini announced his intention of anthe idea of monarchy, and the Fascist march on Rome was organised. The Fascist columns reached Rome on Oct. 30, the same day as Mussolini arrived from Milan in re-ponse to a royal summons. He at once formed a cabinet in which he combined the premiership with the Ministeries of foreign affairs and the interior. Gen. Diaz became minister of war and Adm. Thaon di Reval of marine. At the elections held in April 1924 the Fasci ts gained a majority of 1,758,521 out of a total of some 74 million votes. Mussoliul retained the form of parl gov., and there was, at first, an organised Opposition which hoped to oust Mussoliul on the strength of the anti-fuscist feeling aroused by the murder of the Socialist, Matteoiti. Mussolini remained proof against the Opposition, which combined rigid constitutionalists with anarchic antimonarchists. In Rom. fashion the Opposition 'withdrew on to the Aventine,' atton withdrew on to the Aventine, but this gesture was unavailing. There re-mained only the opposition of the three former premiers—Orlando who retired from active politics; Salandra, who was elevated to the Senate; and Giolitti, who died in July 192%. In domestic affairs the Fascist Gov, set the country to work, re-serts the sight-hour day and develved. setab the eight-hour day, and developed the policy of organising labour into syndicates, which were a species of trades unions, including both employers and workers, and under state supervision.

In toreign attairs, I, successfully encountered many difficulties—with Yugo-Slavia over Flume (see above); with Greece over the nurder of Gen. Tellind of the Albanian Frontier Commission, followed by the It. occupation of Corfu; France over the treatment of It. minorities in France and Tunisia, with Turkey over Turkish fears of an It. annexation of Anatolia. These problems were eventansona. These problems were eventually solved and concluded by a series of pacts—that with Greece on Sept. 23, 1928, with France on Dec. 3, 1927, and with Turkey June 1, 1928, while an Italo Albanian alliance was concluded on Nov. 22, 1927, and a commercial treaty with Soviet Russia had been in existence since Feb. 1924. I. was also a signatory to the Locarno Treatics (q.r.).

Locarno Treatics (q.r.). A rapid increase in pop., coupled with a dearth of raw materials, led I. along the road of imperialism. Fascist policy tended to even greater aggressiveness, notably in rivalry with France, both in naval construction and in agitation for the revi-ion of the Versailles Treaty. But partly owing to France's then dominating position in Europe and Mussolin's dispute with the Vatican over jurisdiction in the position in Europe and Mussolini's dispute with the Vatican over jurisdiction in the educational sphere, the dictator was obliged to pidy the rôle of protagonist in the movement for a limitation of armaments and European security. But five years have the dispute of a new wards Ethiopin sowed the seeds of a new European conflagration, besides menacing the whole existence of the League of Nations. Notwithstanding the existence

conventions nexing the country and, by May, 1936, the nexing the country and, by May, 1936, the It. forces were in occupation of the Abyssinian cap. (see ITALO-ABYSSINIAN WAR, 1935-36). Thus, in addition to the great ters. conquered in 1911, vast new regions were added in 1936; yet the number of Its. settled in E. Africa scarcely ever exceeded 30,000. The League of Nations considered collective action against 1., but the idea was eventually abandoned. As a consequence the various European nations agreed to recognise ious European nations agreed to recognise officially the It. conquest of Abyssinia, and in 1938 as a prerequisite to recognition Great Britain entered into an agreement with I., designed to prevent It. aspiration m Africa and It. support of Gen. Franco in the Sp. Civil war (q,r.) from becoming a the specific war (4,7) from between the two countries. The agreement was not, however, put into effect until after the Munich Part when Mussolini's prestige order of the part in the settlement (see EUROPE—History during the second World War). This event strengthened the ties between I. and Germany even though the Ger. annexation of Austria earlier in 1938 had appeared to frustrate Mussolini's ambition of achieving a dominant position in S.E. Europe. acquiescence in the annexation nullified the Franco-it., Pact of 1935 which was designed not only to regulate relations in Africa but also to preserve the independence of Austria. Later in the year (1938) the pact was formally denounced as a hos-tile gesture towards France whilst It. claims were launched for Dilbouti, Tunis, Corsica, and Nice. Mussolini's aggressive intentions became more manifest while at home his autocratic position was strong-thened by the abolition of the Chamber of Deputies. In its place a Chamber of Fasci and Corporations was set up, having 800 members from the National Council on hembers from the National Council of the Fascist Party and the National Council of Corporations, nominated by Mussolini. The gov. had the right to promulgate decrees with the force of law, which were then placed before the chamber. The chamber dealt with constituber. The chamber dealt with constitutional laws, budget estimates and also
any matters previously authorised by
Mussolini to be so dealt with. The real
uling authority was the Gran (Council),
which was composed of the quadrumviri
of the March to Rome, uppointed for an
indefinite period, a certain number of
members (unhisters and other high digmatries) appointed for as long as they
acid their offices, and an indeterminate
number of members appointed for three
years by the head of the gov.

On April 7, 1939, It. troops invaded
Albania. King Zog fied, and the country
was occupied, King Victor Emmanuel III,
becoming also king of Albania. At the

action S of the Carpathians The attempt to set up I as a Balkan protagonist was part of the policy of non bolliger ency which Mussolini adopted on the outbreak of the Second World War in 1949. He was accordingly thanked publicly by Hitler for his diplomatic and political support and released from military obligations. Nevertheless, the following year with the decline of allied fortunes in the W. Mussolini became convinced of Ger The at-W, Mussolini became convinced of Germany system; and on June 10 I declared war on France and Great Biltim This action was preceded by the breaking off

Germany, however, succeeded in retrieving It fortunes in both \ Africa and the Balkans and the reflected prestige helped to muntain the Cascist regime in I which fell more and more under the control of Gumnny

I was associated with Germany in the detect of Yugoslavia and grined some ter on the Dalmatian coast. A new state of on the Differential color. A new state if the fit duke of Splittias nominal king. I also provided an occupying force for Greece By June 1 I was at war with Russis and by the cut of the year with the U > A I and Other states and states of the cut of the year with the U > A I and the cut of the great and the states of the cut of the year with the U > A I and the states of the sta of commercial relactions and the rejection becoming attration deteriorated and her



NAPIES AND VESUVIUS

of Amer efforts towards peacful inter-vention. The move was unpopular among the it people the more so is the collapse of France did not bring the war to an en l Economic conditions in I became in reasurally more scrious in Oct I launched an attack on Greece but the stout resistance muntained by the (the caused the cumpaign to linger on through the winter with little success for the Its Morcover, the It navy was severely orippled by the attack which the RAF made on the naval base of I manto (Nov 14, 1940) Other events parallel with the lack of success in Albania where an it army was routed by the Cks on March 9 1944, were the loss of the prove of Cyren alea (see Africa Vorth Second World War Campaigns 18), and the successful revolt of the Aby spinlags which alded by Brit arms resulted in the loss of Fritten invasion (March 27) and the fall of Addis Ababa I assist (April 5) (see Italian Last Africa, incuber Second World War Campaigns in) Grandi

in lustry was entirely tied to Germany a w ir machine wir machine Inflation lied me a serious danger which Mussolui attempted to a micr which Muscolm attempted to avert by drastic cuts 11 jublic spendi ture With Ger help chirty were made to strengthen the hold of it I saedst Party which withstood Wr (hurchill's appeal (N v 1942) for I to make peace with the Allies The answer to this was a further an recinent with G in the two countries to the end of the ty or I occupied Vice I (ordica at the same time as the Gers

topics at the same time as the Gere is ved into S 1 and the year 1943 (s.c. ITALIAN FRONT TOWN WORLD WAR CAMPAIGNS ON) with fall of Musolini and an it render to the Allies After the alled massion of Sielly Musolini made a liet that the same and the sam lid to prepare the mainland of I against invasion and to ensure the covalry of the invasion and to ensure the covalry of the invasion the gov, including count grandi At this time also Count Clane.

Mussolini's son-in-law, who had been Foreign Minister since 1936, was appointed who had been to the lesser post of ambas, to the Vatican. Dissension within the Fascist Vatioan. Dissension within the Fascist Party, however, broke into open revolt when Mussolini, after two meetings with Hitler in July, was unable to obtain a promise of adequate Ger, support against the coming invasion. By order of the king Mussolini was arrested, and Marshal Badoglio was called upon to form a gov. He at once put out peace feelers while at the same time publicly proclaiming the continuation of the war. A secret armistice was agreed while the Gers., in anticipalion of some such move, tightened thee was agreed while the ders. In anti-cipation of some such more, tightened their grip in N. I. and also occupled the Rome airdelds. On Sept. 8 following the Allied landing at Salerno the airustice was declared. Badogho set up his gov. was declared. Badoglo set up his gov. in Bit. occupied ter, and on Oct. 11 L. declared war on Germany. The king was likewise maintained by allied authority. In the N., on the other band, Mussolini having been rescued from allied hands by Hitler's emissance attempted to set up a republican Fascist regime. He revenged himself on those of his former supporters who had betrayed him but were now in who had betrayed him but were now in his power. Among them were Count tiano and Marshal de Bono who were tried and shot.

In S. I. there was a movement against the monarchy headed by the Liberal leader Count Torza and the aged philo-opher Benedetto Croce, and this found sopher Benedetto Croce, and this found expression at a meeting of the Council of National Liberation held at Bari in Jan. 1944. The king promised to retire as soon as the Cct. occupation of Rome was ended. In April Badoglio tornied a new gov. to include Count Stora, Croce, and the Communist leader, Signor Togliatti. In Jane the allied armies entered Rome words a popular velcour, and on June the control of the country of th amid a popular welcome, and on June 5 King Victor Emmanuel retired in favour of his son, Prince Umberto. He did not, of his son, France Cimerto. He did not, however, abdicate. Badoglio resigned, and Signor Bononn (q :) an elder states man from the days before I users m, formed a new goy. With an It. Gov. in Rome most of the occupied areas of S. I. were handed over to It. control, and the gov. was recognised diplomatically by the

United Nations. On April 27, On April 27, 1915, Mussolini with twelve of his cabinet was shot by members twelve of his cabinet was shot by members of the Partisan Movement which was resisting the Fascists in N. I. A few days later, May 2, the Ger. army in I. surrended, and the liberation of I. was completed (see ITALIAN ERONT, SECOND WORLD WAR CAWFAIGNS ON). Bonomi, who considered his interim task now at an end, resigned, and was succeeded by Signor Parri, a leader of the Partisans, who formed a coalition gov. with the Socialist leader, Napari, and the Liberal leader, Brosio, as vice-premier; while Togilatti teader, Neani, and the Liberal leader, Broslo, as vice-premiers while Togliatti became minister of Justice. A consultative assembly was set up, and local elections were held at the end of the year. Parri resigned in-Nov., and a new gov. combining six parties was formed by de Gaspert. By this time the Allied Military Core. But have deep was to the It (for the elections were held at the end of the year.

Parri resigned in Nov., and a new gov.

combining six parties was formed by de gasper. By this time the Aliled Mitiary is appeal for revision was, however, made Gov. had handed over to the It. Gov. the to the United Nations. The gov. alliance

control of all ter. except Venezia Giulia. and the Udine prov., while the economic situation was eased by supplies which reached I. from foreign sources through

U.N.R.R.A On May 9, 1946, King Victor Em-manuel formally abdicated, a move which may have been designed to breathe new life into the monarchy. In spite of the fact that it had been decided to hold a fact that it had been decided to hold a nation-wide referendum on the subject of the monarchy in June, Prince Umberto, who had been acting as Lieutenant-General of the realin, was crowned king as Umberto II A referendum was, however, held, and the result was a vote of 12,715,000 tor a republic against 10,719,000 for the continuation of the monarchy. King Umberto at first disputed the deci ion, but on June 13 he left Rome On June 18 the Court of Cassation upheld the result of the referendum, thus bringing to an end the reign of the thus bringing to an end the reign of the House of Savov.

Elections were held for the Constituent Assembly which resulted in a gain of 207 seats for the Christian Democratic Party, 115 for the Socialists, and 101 for the Communists out of a total of 556. The Constituent Assembly met on June 25 and proclaimed a republic, electing En-rico de Nicola as President. De Gasperi continued as premier of a reconstructed coalition gov., the first for twenty-five veus to consist of deputies fixedy elected, Eight members of the gov belonged to the Christian Dinocratic Party, four were socialists, four Communists, two Republican and concluded the control of the control o

hean, and one Liberal

The first event which confronted the new republican goy was the Peace Treaty with the Allies, the draft of which was pub on June 30, 1946, as drawn up in Pans by the Council of Foreign Ministers, ippresenting Great Britan, U.S.A., France, and Russia. The treaty was signed on Feb. 10 the following year, but the It. gov. at the time of signing registered a protest at the terms of the treaty while affirming they would be loyally met. The treaty was an occasion of national rourning, and the terms whereby Estria, Frame, and ter. E. of the Isonzo were coded to Yugoslavia (with the exception of the newly created Free Ter. of Trieste) were considered a sad blow to I. while they did not satisfy Yugoslav ambitions. the anong other conditions were that the Tenda-Briga area in the Maritime Alps was creded to France, and the Dodecanese Is, to Greece while I. also lost her colonies in Africa and agreed to respect the independence of Ethiopia. I. agned to pay reparations over seven years, amounting to 100 million dollars to US S.R., 125 million to Yugoslavia, 165 million to Greere, 25 million to Ethiopia, and 5 million to Albania. Provisions were also made for the demilitarisation of frontiers and of is. to the Mediterranean, and for the limitation of armed forces. and for the limitation of armed forces.

between the Catholics (Christian Democratic Party) and the Communists reflected the uneasy state of equilibrium main-tained in the country two years after the end of the war Shortage of raw materials and other economic difficulties were addi-

tional causes of unrest

The withdrawal of left wing support overthrow the coalition gov in May, but the following month de Gaspers formed a the following month de caspers formed a further got dependent mainly on the Christian Democrats. The Constituent Assembly, due to discolve on June 24 prolonged its own life until the end of the year, thus automatically postponing further elections, and it was in conditions of considerable political uncertainty that the Assembly addressed itself to its prime teal of tangents constitution. station above While the communists still held a place in the gov they tried for purposes of their own, to introduce members of their inovenient into the cuvred out of the gov, largely by Do Gaspers, the communist element in the State's service has been fairly thoroughly weeded out. But at least nine out of every ten ervil pervants who lost their jobs because a their of tions with fa-cism were reinstated. They were never expurgated in the strict sense of the term. because there was no hard and fast rule Roughly, a distinction was drawn at the time between these civil servants who followed Musselm into \ Italy are a the liberation of Rome and those who staved behind, but it was a distinction which could not be maintained for ever The undoubted undertone of fascist sympathy, however, that prevailed in I was still sentimental rather than political and the small aggressive political party of the neo fascists, known as the Social Movement made only slow progress All other ment made only slow progress. All other right wing political groups were virtually eclipsed by the result of the cluctions of April (1918), when the Christian Demo-crate were given an overwhelming man date. The Christian Democrats are not in the abstract, right wing though in the context of present day it politics they wore inecapably on the light as cham plons of the church and the property owner against the community. The party officially demonstrated its central position by allying steelf with the liber is on the right hand and with the republicans and independent socialists on the left. The communist opposition used the trade umon movement as its pun weapon against the gov and since the mail anti-Westpon communist minority in the movement

Austria Austria In the result Grüber, the Austrian foreign minister and De Gasperi, Austrian foreign minister and De Caspert, the It Prime Minister, staned an agree ment between themselves, at Puns, Cutiber asknowledging the Breuner fron tat. In Caspert, in return, promising local self gov or autonomy within the frame work of the It Statt for the prov of Bol zano and the few mixed language coms in the S prov of Trento This agreement we highly unpopulu in both I and Austria both the deput rates. An tria, both the signatories being actued of signing away a national birth right Under the statute eventually dutted the new autonomous region was ti i ic to include Boly mo and the whole of th It speaking prov of Trento Under its shome the Its tell that, though the car peaking elements would get a m juit, in Bolzano prov, they had en strict a safe it spealing in agority in the elected regional council. But both sides had reckened without those inhab of Tirinto who, although they speak it, are publically in sympathy with the Pyrolese princially in sympathy with the Fyrol se and those influenced the result of the election (Nov 28, 1948) which gave the Vols-partiel, or party of the Ger-speaking tople of Bolzano, and the Christian Department of Bolzano, and the Christian Department of the country of the coun

is a tester tongue of Fi. 52. Portraguese Run annan, and Provençal It is naturally more closely connected than any of these with lat, the language of the Roms the uninonce of the written speech of Virgil Cicero, and Horace linguring for long in the peninsula. It grammar is a simplification of Lat grammar, but the popular spoken Lat of the rustic played a very important part in the evolution of the It vocabulary. It is divided into the It vocabulary It is divided into very many dialects and the pronunciation or smiller words differs very greatly throughout the country. The standard literary and political presh is the Tuscan lider which came more prominate during the lourteenth century when it was my the four-openin century when it was compassed by Dante and his contemporal of the sum in me ana ingua itat a (51 84), 1888 1 12, 6 I Ascoli, to how giolologoo i di mo, 1873 et seg. R. Fornacari (10 muitua storua della lingua siduana, 1872 l' Potropochi Van distonari della inima italiana, 1881 li, which is wholly in it the It—Eng. Ing. It dictionary in It hagron, 1902 and B. Migliorini 1 mil tottomary and istate ed.) 1913

communist minority in the movement recorded in 1949, to form its own so called for rounion was almost entirely in the hards of the communists

I. has about 200,000 inhab who have no love for I. Those are the Ger spenking people who live in the northernmost prov of Bolzano, bordering on Switerfland and Austria Petitions demanding a severance of the ties with I were sont to the Parks conference of 1946. Some of the petitioners hoped for an independent Tyrolean State, others called for rounion with

of love and war throughout the peninsula. In the early thirteenth century there grew up round the court of Frederick II. (1194– 1250) in Sicily an It. school of poets who 1250) in Sicily an it. school of poets who closely initiated the Provenceal lyrice both in style and matter. Chief among them were Frederick himself, and his sen Enric (d. 1272). Piero delle Vigne (d. 1219), and Giacomo da Leutini. But their art was wholly imitative, conventional artificial, and consequently short lived. In the latter part of the thuteenth century the Tuscan tongue came into prominence. Puscany had this advantage over the rest that its lingua rolgare, the familiar speech that its lingua volgare, the familiar speech of the rustic, was more generally polished to as to resemble the poetic diction of other dialects. The Siculo-Provençal poetry was imitated by a small Tuscan school, which, with Guittone d'Arrzo (1215-91) at its head, included the humorists and satirists Folgore of San Gimignano, Cene della Chitarra, and Rustico di Fillipo. Guittone abandoned the Provençal chivalric forms, and wrete political and didectic poems. His great political and didactic poems. His great pupil, Guido Guinicelli (d. 1276), wrote philosophical lyrics, which are intellectual rather than imaginative, but mark a great development in the hist, of It, poetry. A contemporary of his was Brunetto Latini (d. 1294), the friend and master of Danto His Tesoretto was obviously influenced by the allegorical poems, such as Le Roman de la Rose. Under the same influence was de la Rose. Under the same influenco Francesco de Barberiuo (1264-1348). Umbria the development of poetry was largely due to the religious movement brought about by the estab. of the Fran ciscan and Dominican orders. To St. Francis of Assisi (1182-1226) has been attributed the Cunico del Sole, a hymneritten in rhythmical pross. The great written in rhythmical prose. The great est exponents of religious poetry at this time were Jacope dei Benedetti da Todi and Raniero Fasani Fasani's Laudi and similar liturgical compositions are the earliest form of It. religious drama. The carliest specimen of it prose dates from the middle of the thirteenth century. The Cento Novelle Anticho vas probably written by a Florentine. It is a collection of short tales drawn from Onental, Gk., Trojan, and medioval sources. Francesco Barberino included similar stories in his Del Regamento e dei costumi delle donne. The letters of Fra Guittone d'Arczzo, on moral and religious subjects, are interest-ing specimens of the lingua relgare. In addition we have a number of trans. and adaptations of Fr. romances and Lat historical ascetic treatures an original scientific work on astronomy and goography called Compositione dil mondo, by Ristoro d'Arozzo; and treatises on government. De regimine principum, by Egidio Colonna who wrote in the Vonetian dialect.

The lourteenth century, called Trecento. Is the age of a inlightly tilo-Dante. Petrar b, and Boccacelo. Hitherto, poets and writers had experimented in various dialects, and Tuscan had been proved to surpass the others. The great writers of the fourteenth century were all Tuscans, and by their use of it made the

Tuscan dialect the acknowledged literary medium of speech in I. for all time, Dante's immediate predecessors in lyric poetry were Guido Cavalcanti, whose Sulla natura d'amore is a poem on the metaphysics of love, Cino da Pistoja, and Lapo Gianni. To this school belonged Dante Alighieri himself (1265-1321). Mis work culminated in the Divina Communa, a transcendental poem of incomparable beauty tere DANTE). Francesco Datance (1301-71) you at the time re-Tuscan dialect the acknowledged literary parable beauty (see DANTE). Francesco Petraica (1304-71) was at the time regarded as the dictator of literature, and his love for Laura has remained as an inspiration to all succeeding pucts of every nationality (see Pitrahen). But he must be studied not only as the writer of beautiful love-lyrics, but also as the first humanist in L. the foreruner of the revival distinguished by an enthusiastic study of anct. classic literature. Giovanni Boccaccio (1313-75) had the same zeal for re-carch into the works of antiquity, as is testified by his encyclopædic works in Lat. on diverse subjects—De genealogia deorum, De casibus virorum illustrium, De claris multeribus, etc. His narrative poems, Testid, Filostrato, and Ninfale flesolamo, are far moro successful than his lyrics, while his .Imorosa Fisione shows the influence of Daute. His fame rests mainly on the Decamerone, a collection of a hundred notelles, which are arranged and told with the skill of an artist who is at the same time an observant and sympathetic man of the world (see Boccaccio).

These three great writers had many mitators Among Dante's followers must be numbered Francesco Stabile, called Cecco d'Ascoll (1269-1327; L'Acerba), Fazio degli Uberti (Dillamando), Federigo Frezi (Quadrfregio), whose works are chiefly of historical interest to the student Novel writing had already attained great popularity in France and other countries. The example set by Boccaccio was now closely followed by Giovanni Fiorentino (Preceme, 1378), Franco Sacchetti (d. 199), a moral writer on immoral subjects, and Giovanni Lorcambi of Lucca (1347-1421). The prose literature of the time is chiefly represented by the tales and novels of these and other men, and chronicle is very important as being the first attempt at historical writing. The greatsthistorian of the time was undoubtedly Giovanni Villani, who wrote a chronicle of bis native city, Florence, including a review of the world's hist. From the Tower of Babel down to 1348. Travel literature is represented by the traces of Marco Polo, and the religious and mystic sentiment of the time is expressed in the letters of St. Catherine of Siona (1347-80) and in the Fronti, a collection of the words and deeds of St. Francis, During the period succeeding the death of Dante, Petrarch, and Boccaccio, there was a dearth of great writers. This may be accounted for partity by the over estimation of anct. Gk. and Lat. writers and the consequent under estimation of works in the vulgar tongue. Among those who ventured still to write in it, rather than in Lat. must be numbered Leon Battista Alberti (1407-72), with his Della Familia. and Matteo

Palmieri (1406-75), with his Della Vita Cirile. Works of a more popular kind were the prose romances I real di Franca and Guerino il Meschino of Andrea Barberino (1372-1431), the burlesque topical sonelli candati of the Florentine, Domenico di Giovanni (d. 1448), surnamed Il Burchiello, and the rappresentazioni sacre, or religious dramas, which corresponded in some ways to the miracle and mystery plays of England.

In the middle of the fifteenth century two great events occured which were of vast importance in the literary hist, of every European country. One was the every European country. One was the fall of Constantinople in 1453, which drove many Gk. scholars into W. Europe, the other was the invention of printing, which other was the invention of printing, which did not affect I. till 1164. In 1447 the erudite founder of the Vatican Library was made Pope Nicholas V, an election which gave great impetus to the study of antiquity. Another event which influenced It literary hist, was the foundation of the Rom Academy and the Florentine Platonic Academy, the latter of which made the important declaration that It was equal in literary ment to Lat Moreover, in the great centres of literary active. over, in the great centres of literary activity there were grow're up young men of genius who became zealous advocates of genily who became zealous advocates of maintaining the literary traditions of the country. One of these was Lorenzo de' Medici (1448-92), prince poet, and patton of literature His works include Ambra, an Ovidian allegory La Caccua col Fulcone, La Zeucia de Harberno, the Canti cane, I.a. Zeucia at Barnerina, the Canal Carnascaleschi, carnival songs of a some-what licentious character, a number of elegant love poems, besides pastorals and satires. He not merely encouraged, by his personal example, the use of popular literary forms, but he infused into them the culture of the Renaissance The most distinguished of the men of letters who distinguished of the men of letters who frequented Lorenzo's court in Florence were Luigi Puici (1131-37) and Angelo Ambrogini (1454-92), commonly known as Politian. To the former we are indebted for the Morgante Mayyore, a humorous epic in ottara rima, which contains a curious mixture of flippant and irreverent buffornery, lofty sentiment, and religious fervour. Politian, who was a brilliant classical scholar and philologist as well as a poet, wrote the lyne tragedy Orfeo Giostra, a poem on the tournament, and Other protégés of Lorenzo were Antonio Manetti (1423–97) and the famous Girosance of anct culture was similarly fos-tered by Ferdinand I at Naples. Jacopo serve of recumand 1 at Napley. Jacopo Sannazaro (1158-1530) was the first to show that excellent It. prose could be written outside of Tuscany. His Arcadu, a pastorul romanice, foreshadowed by Boc-cacelo's Anclo, is classical in its construc-

which are unfortunately written in Lat. In Ferrara, the literary centre of the N., Matteo Maria Boiardo, Count of Seandiano (d. 1494), enjoyed great popularity as the author of an unfinished poem, Orlando Innamorato, which celebrates deeds famous in old Fr. cycles. The story is original, and though the incidents are ingenious the characters are real people, but the style and diction are lacking in refinement.

The romantic epic, thus for the first time handled with any success by Bolardo, was perfected by Lodovico Ariosto (1474-1533). See Ariosto. His Orlando Furusa is a sequel to the Orlando Innamorato. The works of Ariosto open a new period in the history of It. literature, a glorious period called by Its. the Canqueeralo, which is in many respects equal to that of Dante. Petrarch, and Boccacio. Ariosto



LUDOVICO ARIOSTO

ous mixture of dippant and irreverent buffoonery, lofty sentiment, and religious fervour. Politian, who was a brilliant classical scholar and philologist as well as a poet, wrote the lyric tragedy Orfoo Giosta, a poem on the tournament, and some exquisite shaze per la guestra of the symmetric per la guestra (1432-97) and the famous Giro-lamo Savonarola (1452-98). The Renaissance of anct culture was similarly fostered by Fordinand I at Naples. Jacopo Sannazaro (1458-1530) was the first to show that excellent It. prose could be written outside of Tuscany. His treadu, a pastorul romance, foreshadowed by Bocacofo's Amelo, is classical in its construction of sentences as well as in its setting 1t set the fashion for writing in studied poetical prose, and prescribed the rule for all future pastoral romances. A fellow townsman of his was Glovanni Pontano (1458-1503), the founder and head of the Neapolitan Academy and the author of the cynicism and lack of morality that

was characteristic of the time is prominent in the work of that crafty but far-sighted statesman, Nicoolo Machiavelli (1469-1527). Second to him as a historian is Francesco Guicciardini (1483-1540), who, besides writing of the hist, and gov. of Florence, made a collection of aphorisms for statesmen called Records politics of cirili. The two chief novelists of the sixteenth canture, ware Mattao Bandello and teenth century were Mattee Bandello and Anton Francesco Grazini. Although the former was a Dominican friar, his works reflect the loose manners of the time as much as any of those of his contemporaries. The licentiousness of the It court was embodied in the infamous Petro Arctino (1492-1557), whose letters, pub. in Pens in 6 vols. (1609), are an index to the life of the times. His comedies are lively and saturic sketches of contemporar manners. Other comedy writers of high merit are Giovan Maria Cecchi, Machin-velli, and Ariosto, but the greater number of It. play wrights adopted the conventional methods employed by sirct, writers of Lat. comedy. During the latter part of the Renaissance a literary controversy took pace with regard to the introduction of dielect forms in literature. In the end the 'purists,' who maintained the Tuscan of the fourteenth century to be the literary tongue, prevailed. Chief among them was the crudite Cordinal Bembo (1470-1547) who came to be regarded as the dictator in all matters of literary taste. Other writers of pure and elegant proper were the Martuan Castiglione (1478-1529) and the Tuscan della Casa (1503-56).

The work of Torquato Tasso (1544-95) brings this period to a close, and forms a link between it and the next. He early writings included Rinaldo and Aminta, a beautiful pustoral play, but his life work was the Gravala mine Librata, a noemen a heroic scale, in which is expressed the profundity of his feeling and the deep melancholy of his soul.

The period of decadence which fol-lowed the glorious eld of the Renaissance may be traved back to the middle of the sixteenth contury. The writers of the Scientismo were devoid of imagination of passion of sentiment. The inspiration of passion of sentiment. The inspiration of the Revival of Letters left them cold and barron, and their work is distinguished by its exaggeration, bombast, and artificial-The fashion for this rapid manner of viting was set by Giovan Battista Marini (1569-1625), who, in spite of his far-fetched conceits and extravagant metaphors, showed a vigorous imagination in his poem, L'Adone. His manner was mimicked by le-ser men, and the style which came into vogue was called after him Warmismo. Another characteristic of the Selectitismo is seen in Gabriello Chiabrera of Savona (1552-1637) and his followers, Fulvio Tegti of Ferrara (1598-1646). Francesco Redi of Arezzo (1626-98), and Alessandro Guidi, who initated Pindarlo and other classical metres, and showed themselves possessed of a real tyric gift. The pastoral drams, essentially an artificial production, became extremely popular, the chief examples of the kind being the Pastor Fido of Guarini (1537-1612),

and the Daine of Rinuccini, which was set to muse by Peri and Caccini. Vincenzo Filicaja (1612-1707) is noteworthy as being one of the few writers of this age with real sentiment. Ilis songs have a true patriotic ring, but even they are expressed exaggerated form. A reaction in an against the extravagance of metaphor and against the extravagance of metaphor and the affectation of an exuberant, passionate style became cyldent, and took definite form in the estab. by Giovan Maria Crescimbeni and Gien Vincenzo Gravina of the 'Academy of Arcadia' (1690), which advocated a return to pastoral simplicity. The most noted of the 'Arcadians' were innecenzo Frugoni, Felice Zappi, and Paolo Rolli. But these would-be reformers only escaped one affectation to fall into another; the effeminace of their formers only escaped one autocasson with all into another; the effentiace of their madricals is no better than the hyperbole of Matuni A healthy sign of revolt against Marinismo and Arvadia is seen in the satires of Salvator Rosa (1615-73), a Neupolitan artist and musician and a a Neponian artist and invacian and a foreminer of the eighteenth-tentury patriots and in the mock-heroics of Alessandro Tasson (1565-1638), the author of a section Randa and full pieche. But the most durable work of the Selcontismo was done by scientists like Galfieo Galliei and Fia Paolo Sarpi and thinkers like Glordano Bruno and Torimasu Campanella. The prose of Galileo is distinpanella. The prose of Galileo is digushed by its precision and virility.

The Risorgimento, or Age of Revival, was also prepared by Giambattista Vice, who, in his Scienza nuova investigated the universal laws of bist which had governed the progress of the human race. Lodovico Artonio Muratori, Sciptone Mattel of Ver-ons and Apostolo Zeno epplied thomselves industriously to bistorical research, and Count Giovanni Maria Mazzuchelli of Brescia and Girolamo Tiraboschi showed an interest in the sources and development of interature. Independent criticism found a public plutform in the reviews recently estab on the model of the Eng. Speciator and Taller. Chief of these were the Osser-ial r and Gazrella reneta of Gaypare Gozzi (1713-86) and the Frusta letteraria, m which Ginseppe Baretti of Turin (1719-69) gave vent to his satisfical humour, Most conspicuous among the literary reformers of the Risorgimento was Giuseppe Parmi (1729-99), a Lombard poet, who induded the frivolity and self-indulgence of the society of the time in Del Giorno. Carlo Goldini (1707-93) may be regarded. as the dramatic reformer of the eighteenth century. With Molière as his master, he studied the people living about him and supplanted the commedia dell' arte by

supplanted the commenta are are by conseller of character.

The educated classes in I. were at this time filled with a hope of freedom from the loreign yoke. The idea of therty they found best expressed in the writings of anct Gk, and Lat. writers on whose style they tried to model their own. Vittorio Alfori (1748–1803) made a determined effort ic establish a national dramps. His effort to establish a national drama. tragedus, which are almost invariably based on incidents in Ok. or Rom. hist., may lack artistic finish, but they are in-spired by a noble patriotic spirit. The

chief literary fighters for national liberty at this time followed Afferi in a return to classic models Ugo Foscolo (1778–1827) passionately advocated the political cause in Lettere d. Jacopo Ories, Sepolera, and Ories, which are somewhat marred by his Gargantuan rhetoric. Foscolo should also be noted as a literary critic of high merit. His most important work as such is Dell'. His most important work as such is Dell' origine e dell' uffu to della letteratura he also wrote textual criticisms of Dante and Boccaccio Other classicists of note are Vincenzo Monti (1754–1828), who attacked the Papacy in Superstratone and leanat smo, and expressed his fears for his coun try in Ba smiliana and Peroniade, Giam battista B Niccolni (1782-1861), who battista B. Niccoimi (1782-1861), who wrote tragedies on political subjects, as a g. Anionio Foscarna and Lidonico il Moro, Ippolito Prindemonie (1753-1828), a dramatic poet and Leopardi (1798-1837) the greatest lyrist sunce the Tricento Indignation against Napoleon's aggressive policy roused Carlo Botta (1766-1837) to write a hist of his country during the years 1789-1814. Other historians like him distinguished by their nationism and him, distinguished by their patriotism and by their classic methods, are Cesare Balbo (1789–1854), and Gino Capponi (1792–

1876)
The modern literature of I may be said to have arisen out of the romantic move ment which started in Milan towards the end of the sighteenth century The chief The chief characteristics of the new movement were a renewed study in the aurer trecentists, the classic writers of the fourteenth century, and in all incdit val things, and a keen interest in the works of such men as Goethe and Byron, who represented a similar movement in Germany and England The organ of the new school was the Concilia-tore, a journ il estab in Milan in 1818, and its leader was Alessaudro Manzoni (1785 1873), the author of 1 great historical novel, Promesa 'spost, which owes much to Sir Watter Scott Domenico Georgia; (1864-74) and Mussimo d'Azegho (1798-1865) were successful exponents of the historical novel Giusoppe Giusti (1899-50), a Tuscun won great popularity with his clever engrammatic satires Among the political revolutionists, who were at the same time powerful literary advocates of the cause of librity, should be noted Vincenzo Globert (1801-52), who is also known by his philosophical work, Primato morale a coule digit Italians, Niccolò Tonmasco (1802-74), and Giuseppo Massiri (1802-74) Mazrini (1808-72)

Since 1850 politics have had less in fluence on Italian literature. The transi

tation as a writer of mystic and philoso-plinal novels with an historical setting. The influence of the realistic movement is Edmondo de Anicis (1846-1908), known Edmondo de Amicis (1846-1908), known by his novels and travels, is one of the most popular of writers. The chief women novelists are Grazia Deledda and Mathide Serao, while Vittoria Aganoer, Annie Vivanti and Ada Nogri are women poets of repute. Gabriele d'Annunsio (q v) is a brilliant and versatile writer a dramatist, poet, novelist, and ortic. His genius is undeniable but many crities compleme of the hegentosympes and pear complain of the licentiousness and pesi uturism in literature was linked to that in painting, and indeed showed Fr influence. tt leader was Marinetti, together with Soffici Papini and Ungaretti In criticism and philosophy the outstanding figures are Benedetto Croc e and Giovanni Gentile, while Pasquale Villari's books on Machiavelli and Savonarola have become classics. (note work has been the direct cause of the revival of eathetic criticism throughout Europe, and he is also a philosopher and historian. With the dramatist, Brace o, he is one of the few prominent It. istacco, he is one of the few prominent it, authors who are out of sympathy with the lacest ideas. But there is among sounger people an inevitable reaction grant (rece's characteristic optimism, a naction which often takes the shape of custenzulismo (Existentialism) and homage to 'irtre More specifically postibilit is like and the local scene in new like the like and the local scene in new like the control of the local scene in new like the local scene in the local scene ploit It life and the local scene in novel and story—in, for instance, the Sardinian novel of Grazia Deledida Nobel prizo-emmer in 1927, or in the savesatic but humorous work of Ugo Oletti or of Panzim, Brocchi, Raffaello (aizini, and Martino Moretti, who is also a poet of distinction Other important writers are the novelus Zives (a.) Bleerando Bastinction Other important writers are the novelest Zucca (q 1), Riceardo Bacchelli whose long novel, Il Diazolo al Pastelungo, is descriptive of the Italian anarchist movement and Prof Borgess (q r), who besides being a literary critic, has written a novel hube, reflecting the decadence of life after the First World War Bachelli's work is linked in a personal and direct way not but traditions of Since 1850 pointes have had less in fluence on Italian literature. The transition between the Age of Revival, which roughly speaking, covered the years 1750 1850, and the age of King Humbert is marked by the patriotic poems, stornally pointer, of Francesco dall' Ongaro ontelly pointer, of Francesco dall' Ongaro of Lush') is an achievement equal if not 1868-73. The traditions of the roman tie school were maintained in the poems of Ciovanni Prati (1816-84), but the greatest Italian poet of the post-Risorgi mento, Giosuè Cardined, set on one side the outworn methods of the Romanties, and sought his inspiration in the national literature of an earlier time. The chief followers of his classical manner are Guido

is theatre at Taormina in 1925. With the possible exception of Croce, the Italian writer of the greatest European importance is Luigi Pirandello (q.v.), who exploits a psychological world of half-reality. He is a prolific short story writer as well as play wright, and in fact with him the two mediums are not widely dissociated. The Fascist regime, while not seriously defecting the career of the not seriously denecting the careers of the older estab writers such as Pirandello or Panzini, did not produce any notable literature of its own. The best writing was produced in exile, and the It socialist, Ignazio Silone, gained European fame with his novel Fontemara in 1930 He with his novel Fontemara in 1930 He also wrote a Hustory of Fascasm in 1931 He returned to I. in 1945 Since the Second World War the only important books of verse have been Eugeno Montale's Finusterre (1946), and the complete ed. of Umberto Saba's poetry (1946) These are the major It poets to day. Ungaretti, who has recently issued a trans. of Shabasheare's connect is the most These are the major it poets to day. Ungaretti, who has recently issued a trans. of Shakespeare's sonnets, is the most notable poet of the previous generation Alberto Moravia seems to be the It novelist best known outside his own country Agostino, reputed to be his best book, relates to the disturbance and anxiety with which the discovery of sex afflicts the adolescent — a hackneyed theme which, however, Moravia treats with a kind of lucidity Equality ruthless is Guido Piovene's Pietà contro Pietà ('Pity against Pity') (1946), a novel of contemporary life, crude and subjective, but penetrating. Corrado Alvaro, author of L'Età Breve ('The Brief Age') (1947) is a Calabrian novelist who is well known in I. Among contemporary short story writers the best known are Vitalino Brancati, whose Il vecho copis struct ('the Old Man with the Boots') (1911) is a description of prov Sicilian life under the Fascists; Carlo Cassola and Guglielmo Petroni. The It Resistance movement, unlike that in France, did not result to any travolal literature though pention lieimo Petroni The It Resistance movement, unlike that in France, did not result in any typical literature, though mention may be made of the novel Uomini e no ('Men and Not Men') by Flio Vittorini (1945), whose later work, however, has reverted to the manner of Sarovan, and of the autobiographical sketch. Il Mio granello ('My Grain of Sand') (1946) by Luciano Boris. Among the many new literary reviews may be mentioned Anglica (Florence) devoted to English studies Mercurio, and Il Ponte-all being post 1945 productions Frera Letstudies Mercurio, and I being post 1945 productions Frera Letteraria is still regarded as the best literary weekly publication. In another sphere It writing to day shows intense vigour historical research, philosophy, art criti-cism, and philology are four-shing, and works of this kind are the chief merit of It culture to-day

Music — For early developments con-nected with Rome as seat of the Christian Church, see the article Music The Important movement known as Ars nima, which during the fourteenth century replaced the medieval organum by a poly-phonic style with a much wider harmonic Gk tracedy they rejected polyphony and and rhythmic range, was largely it. (Florentine) in origin; but the composers cided with the introduction of the figured

Gk. theatre at Taormina in 1928. With the possible exception of Croce, the Italian writer of the greatest European importance is Luigi Pirandello (q.v.), who exploits a psychological world of half-reality. He is a prolific short story writer as well as play wright, and in fact with him the two mediums are not widely must be a prolific to the dissociated. The Fascist régime, while not seriously deflecting the careers of the older estab writers such as Pirandello or (Eng ballet), and the canonic cacua (Eng. (Eng ballet), and the canonic caccia (Eng. catch), all characterised by harmonic catch), all characterised by narmonic amplicity, lightness of mood and concentration of melody, always a strong feature of it music Verse and music were closely integrated, sometimes dancing and instrumental accompaniment were added The Laudi Spirituili, popular hymns influenced by plainsong, originated at Florage in the fourteenth century and at Florence in the fourteenth century and later became an important element in oratorio The union of it, secular song and Flemish poly phony produced a valu-able art form in the madrigal, whose style, anie art form in the materigal, whose styre, imitative rather than contrapuntal, was founded on a perfect balance between words and music. Its earliest masters were Flemish, notably Willaert and Lassus, but it was soon taken up by native composers and reached its height in the work of Marenzio (1)53 99), Gesualdo (c 1:60-1615) and Monteverdi (1567-A severer method, influenced less by popular song and more by the motet, was cultivated at Rome, first by Costanzo (152)-94) Charged by the Pope with the purification of church music, Palestrina purination of church music, raissuring evolved a style, compounded of it lyricism and the solid contrapuntal achievements of the Fletnings, that crowns the whole polyphonia period

The leaders of instrumental music were

the Venetians. Venue, the centre of music printing, became in the sixteenth century the bub of European musical life. The earliest surviving lute books, consisting of transcriptions, dances and fandasi w, date from 1.07.09. The canzona and recrure, originating in thans riptions of the Flemish motet, were cultivated by Anire Gabrieli (c. 1510-86) and developed by Claudio Merulo (1-33-1604) and devolutional Gabrieli (15-)7-1612) into independent compositions for organ. Another new instrumental form was the loccata, in new instrumental form was the locala, in which a genuine keyboald technique became apparent. Among Giovanni Gabach's innovations was the use of voices and instruments in antiphonal groups, this arise from the shape of St. Mark's Cathedral, which required the divoof the choir into two parts, each with its own organ. With Freescobaldi (1583–1644) the grouper dividend into the own organ With Frescobalda (1583-1613) the ricercare developed into the

modern fuguo
About 1600 Italy produced two new large scale forms, opera and oratorio. The earliest operas were the work of an adistocratic Florentine group known as the Camerata, chief among whom were Peri (1561-1633) and Carcini (1545-1618). Endeavouring to revive the methods of

Another approach to the stage was h the madrigal: Orazio Vecchi through the madrigal; Orazio (1550–1605) wrote an early dramatic work in the form of a string of madrigals, and Monteverdi, in whose madrigals the music had become more and more an emotional illustration of the text, turned to opera in 1607. He greatly enriched its orchestral element and range of harmonic expression. which he put to true dramatic use. ancestor of the oratorio was the medieval morality play, as developed by St. Philip Neri (1515-95) at his oratory in Rome. The first oratorio proper, by Cavalleri (c. 1550-1602), was produced in 1600 with scenory, costumes and dancing. It difseenory, costumes and dancing. It dif-fered from opera only in its othical subject. During the seventeenth century both these forms, especially opera, sprend throughout Europe, but the It. love of seenic and vocal display caused an increasing emphasis on virtuosity at the expense of dramatic truth and orchestral colour. The operas of Cavalli (1602-76) and Cesti (1623-69) saw the gradual and testi 1023-03) saw the gradual separation of aria from recitative, a process standardised by Alessandro Scarlatti (1660-1725), a great melodist, who establishe it. overture da capo aria, opera buffa and the two aimbout recitative. He also should be observed to construct ejected the chorus, whose part in oratorio however had been extended by Carissimi 1605-74) Another form, coeral with opera and oratorio, reshaped by Carissimi and soon pipularised abroad, was the cantata, whether sacred (da chiesa) or secular (da camera). Opera in the It style and language continued to dominate the stages of Europe throughout the eighteenth century, aided by the vogue of the male soprano or castrato. The librettos of Metastasio (1698-1782) imposed a still Methotasio (1998 1782) imposed a still stricter formalism, but the quality of the music doclined and the dramatic element all but vanished. Of many it, operatic composers Pergolesi (1710-30) is remem-bered for his success in opera buffa.

The leading It. keyboard composer after Froscobaldi was l'asquini (1637–1710)
The great advances made in N. It. in the evolution of the violin family led to an exevolution of the violin family led to an ex-tension of instrumental music parallel with that of opera. It was this age that gave to music many of its familiar It terms. The sonata, originally any piece written for instruments (as opposed to cantata, a piece for voices) and more or less synonymous with canzona and sin-fonia, developed like the cantata in two forms: sonata da chiesa, derived from the old polyphonic style, and sonala da camera, based on popular dance measures. works were at first written for sev. instruments, generally of the violin family, but in time were confined to one or two supin time were confined to one or two supported by a string bass and continuo
(figured bass) on the harpsichord. The
(figured bass) on

Geminiani (1687-1762), Vivaldi (c.1675-1741), a many sided composer who influenced Bach, and Tartini (1692-1770), who improved the technique of the violin. The pianoforte was invented about 1710 by an It. Bartolommoo Cristofori (1655– 1731), but did not at once become popular, and the greatest It. keyboard composer, Domenico Scarlatti (1685-1757), wrote for the harpsichord. His very varied onemovement sonatas have the greatest artistic and technical importance.

After 1750 It must lost its begemony. Opera buffa alone retained some vitality in the works of Paisiello (1740-1816) and Cimarosa (1749-1801). A spark of brillance was supplied by Rossini (1792-1868), who however, like other its. of his romantic opera in Paris. Native melody and vocal virtuosity continued to find expression in the operas of Donizetti (1797-1848) and Bellini (1801-35) and in the early work of Verdi (1813 1901), a direction of the operas of the early work of verdi (1813 1901), a direction of verdi (1813 1901), a directio dramatic composer of rare genius, who in his later operas achieved a perfect balance between drama and music, thus at last reaching the standards set by Monteverdi. During the late eighties a new type of opera, based partly on Fr. and Ger. models and known as revismo from its attempt to reproduce the situations of every-day life, was initiated by Mascagni (1863– 1945) and Leoneavallo (1858–1919). But their operas and those of Puccini (1858-1924) a composer of greater refinement, are marred by a search for effect that is too often neither musical nor truly dramatic but melodramatic.

Towards the end of the nineteenth cen-Towards the end of the nineteenth century it. Interest in instrumental music, dead for more than a century, was revived by Sgambati (1841-1911) and Martucei (1856-1909), and their successors have cultivated all the possible forms, both vocal and instrumental. The most important composers are Respighi (1879-1936), best known for his rich orchestral works, Malinian (A. 1862). Desertif (1864), best before the contract of the cont piero (b. 1882), Pizzetti (b. 1880), both of whom have adopted a more serious instrumental style, Casella (1883-1347), whose output is celectic, and Dallapiccola (b. 1904). But Italy has not yet found an operatic successor to Pucchil.

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ART: See ITALIAN ART: ARCHITECTURE.

Italian.

Italy, British Army in (First World War). The disastrous It. defeut at Caporetto (q.r.) occurred in Nov. 1917, but before the close of the year the Brit. Gov. sent out five divs. It is undoubted that these reinforcements were a vital moral influence in restoring what seemed a desperate situation. In March 1918 two of these divs. were, however, sent to France in view of the impending Ger. attack on the W. Front. When the Austrian offensive of May 1918 opened the Brit. forces, under the command of Gen. the Earl of Cavan, were disposed on the Asiago Plateau. While the Its, were repulsing the enomy in the Adamello passes the Brit. repulsed them on the plateau and both allies took many prisoners and guns. On June 15 the Austrians Italy, British Army in (First World War). oners and guns. On June 15 the Austrians launched a heavy offensive from Asiago to the sea with 600,000 men, crossing the Plave the same day at Montello and near the mouth. The Brit. forces, which in-cluded several battalions of the Royal Fusiliers, played an important part in hurling the Austrians across the riv. again and involving them in the tremendous and involving them in the tremenques defeat of the early autumn, which ended in the armistice with their being signed on Nov. 4. The total number of Brit, forces employed in Italy was about 101.000 combatant and 44.000 non-combatant troops, the maximum strength at any one time being about 90,000 combatant troops. The casuaties were, killed and died of wounds, 1057, missing and prisoners, 670, and wounded, 1971.
Italy Star, Brit military decoration, instituted in 1915 for entry into operational service on land in Stelly or in Italy at any

service on land in Sicily or in Italy at any

service on land in Sicily or in Italy at any time during the campaign there from capture of Pantellaria on June 11, 1943, and until May 8, 1945. The ribbon is in It. colours, green, white, and red. Itch, any irritating skin disease. The commonest form is scalies, a disease caused by the animal parasite, surceptes scales, which burrows under the skin and causes intense irritation leading to scratching on the part of the retains with scratching on the part of the patient with scratching on the part of the patient with resulting rawness, scabs, and escenations conditions. It may occur on any part of the body, but rarely on the scalp and often between the flugers. The treatment is application of sulphur cintment. Barber's tich is caused by a fungus and affects the hair follicies, particularly those of the beard. The inflammation set up leads to the formation of pustules at the root of the nave of the church of the Annunziata, each hair affected. Cuban itch, an irritation the beli-tower of S. Maria, and the facade ing skin disease introduced by soldiers of St. Michele Arcangelo remained intact, from Cuba; it is supposed to be a mild variety of smallpox. Coolie tich, a skin-inflammation common amongst field-workers in Assam and other tropical countries. It is caused by the larva of uncharis duodenutis, and the eruptions are confined to the surface of the lower extremities.

Itch-mite, name given to the species of Sarcoptine, a sub-family of archnids which are parestic on the skin of mammals, birds, and insects. Notceres, Prosopodectes, Sarcoptes, and Chortoptes Prosopodectes, Sarcoptes, and Charloptes are among the commonest geners. S. sabes attacks the skin of man, and produces the disease known as scables.

Ithaea: (1) Now called Thiaki, one of the Ionian Isles, and lies E. of Cephalonia. the Ionian Isles, and lies K. of Cephalonia. It has an area of about 37 sq. m., and is mountainous. Wine and olive oil are the chief productions. The chief in is Vathy (pop. about 3,200). This is, is noteworthy as having been the home of Ulysses. Pop. about 8,800. (2) in., the cap. of Tompkins co., New York, U.S.A. on Cayuga Lake. Cornell Univ., the New York State College of Agriculture, the Athra Couservatory of Music, and the Empire State School of Printing are situated here. Pop. 19.700.

Ithome, name of a fortress and mt. in Messenia, anct Greece. The fortress played an important part in the Messenian was waged against Sparta during the

wais waged against Sparta during the seventh and fifth centuries B.C.

Itinerary (Lut itinerarium, from O. Lat. Miner, a journey), name applied by the Roms. to a list of the stopping-places, or halts, with the distances from one to another, between two places of import-ance. The I. was generally divided into two classes, one having the character of a book, and the other boing a kind of travel ling map. Of the former, the most im-portant are the linerana Antonia, and the ll. Hierasalymianum Of the latter only one great example remains, viz the famous Tabula Peutingeriana.

famous Tabula Feutingeriana.

Ito, Prince Hirobumi (1838-1909), Jap. statesman. In 1863 he worked his wav before the mast to London, and joined others of his nation who had come to Europe to study W. civilisation. He returned to Japan in 1865, and took an active part in the social and political reorganisation of the country. From being minister of public works he read to the organisation of the country. From being minister of public works he rose to the rank of Prime Minister in 1880, which office he held four times. He was selected by the Mikade to study the various forms of constitutional gov. in Europe, and was the author of the Jap. constitution of 1889, which in many respects was more liberal than that of several European countries. He was made Prince in 1907, and appointed resident-general of Eores. and appointed resident general of Korea after the Russo-Japanese War, meeting his death at the hands of a Korean at

but the church of S. Martino was com-

but the church of S. Martino was completely wrecked.
Itû, or Itû, tn. in Brazî, on the R. Tiete, 70 m. W.N.W. of São Paulo. It is the centre of a great cotton, sugar, and coffee producing dist., and has cotton factories, and iron and bronze foundries. Pop. 38,000.

Iturbide, Augustin de (1783–1824), for ten months emperor of Mexico, was a Creole by birth. In early life he much distinguished himself as a soldier in the rovalist cause, which was then endangered royalist cause, which was then endangered by Hidalgo's and Morelo's rebellions. In 1822 he accepted from his devoted soldiers the title of Emperor Augustin I., for the 'Sp Cortes refused to recognise the virtual independence of Mexico as set forth in the independence of Mexico as set forth in the treaty of Cordovs. After a compulsory abdication (1823), the result of his arrogance and despotian, he went into exile, and on returning was met and shot. See M André, La Fin de l'Empire espagnol de l'Amérique, 1922.

Iturea, dist. in anct Syria, lies between Damascus and the Lake of Tiberias in N. F. of Dalactine.

NE of Palestine.

Itzehoe, tn. of Germany, on the Stör,
44 in N.W. of Hamburg, is the oldest
town in Schleswig-Holstein. The castle
of Enselsfieth, round which it was built,
was erected by Charlemagne, 809. Pop. 20,000.

Iuka, tn. in Mississippi, U.S.A., county seat of Tishomingo co., is 22 m S.E. of Corinth. Here the Federals under Gen. Rosencrans defeated the Confederates under Gen. Price in 1862. Pop. 1,400. Iulus, see JULUS. Iulus, see ASCANUS. Ivan, or John, name of six grand dubag.

Ivan, or John, name of six grand dukes

of Moscow and tsars of Russia.

Itan I (1301-41), surnamed 'Kalita,' or 'Money-Bag,' because of his strict economies, consolidated scattered Russian ters, conquered Moscow and Tver, and made the former city the metropolitan see in place of Vladimir.

from II. (1326-59), son of the above, was a 'gentle and merciful prince,' but a weak ruler, who much diminished the grand duke's prestige. He began to

reign in 1353.

Trum III. (1440-1505), called 'the Great,' ascended the throne in 1462. He commander Svenigorod crushed the power of the invading hordes of Tartars (1481). I introduced fire-aims and cannon into Russia (1475), and also forced the hereto-fore independent kingdom of Novgorod to acknowledge his successity (1478). He disreparded his boyars, and ruled as an autocrat.

Iran IV. (1530-84), called the 'Terrible.' grandson of the above, came to the countries. He was made Prince in 1907. The Frandson of the above, came to the and appointed resident-general of Korea and Anter the Russo-Japanese War, meeting his doath at the hands of a Korean at Kharbin.

Kharbin.

Itri, small tn. of Littoria, Italy. It was the bp. of Fra Diavolo. As a result of the Second World War the tn. and its otherwise are in ruins. The central part of number of ruthless massacres. 1682, and was associated in power with his half-brother, Peter. He was quite deficient in personality, and became the

tool of stronger men.

Ivan VI. (1740-64) never reigned, but passed practically the whole of his life in solitary confinement till his murder in

Ivan Gorod, see NARVA.

Ivanov, Nicholas (c. 1858-1918), Russian soldier, son of a common soldier accidentally killed when I. was twelve years dentally killed when I. was twelve years old at a military review in presence of Alexander II, who had I. admitted to a military school and helped his advancement. In the First World War he commanded one of the armles operating in Galicia; won much distinction, capturing Lemberg and Przemysl. In 1915 after the Russian retreat, he resigned his command, but was retained at headquarters by the Tsar—who telegraphed to him when the revolution threatened. I. thereupon made a dash for the cap.; but when he learned that he would be totally unsupported there, he desisted. On unsupported there, he desisted. On Feb. 16, 1918, it was reported at Petro-grad that I. had been killed in action at Kiev.

Ivanovo (or Ivanovo-Voznesensk), region and tn. of central Russia. The tn. was formerly in the gov. of Vladimir and is situated 60 m. N.N.E. of Vladimir. Sown situated ou m. N.N.E. of Viadinir. Sown grasses form an important part of the agric. economy in the I. region, which is also noted for dary farming. I. is the Manchester of Russia—the centre of the cotton-spinning and weaving industry. There are also chemical works. Here is also one of the large regional peat-electric powers stations of Russia. I is conpower stations of Russia. I. is con-nected by rall with Moscow, about 180 m. distant. Pop. (tn.) 285,000, (Region) I. is con-4,500,000.

Iveagh, Edward Cecil Guinness, first Earl of (1847–1927), Irish philanthropist; third son of Sir Benj. Lee G., M.P., first Bart. Educated at Trinity College, Dub-lin. From 1886 he was chairman of the limited company then formed to take over the business of G.'s brewers, but he retired from active work on the board in 1889. His first charitable donation was a quarter of a million to be spent in building homes for the poorest workmen of London and Dublin. This fund is now controlled by the London and Dublin Guinness Trusts for Housing the Poor. Guinness became a peer in 1891, and soon afterwards embarked on a scheme for clearing and replanning seven acres of slum in Dublin city. Here he arranged for labourers' dwelling, a public pleasure garden, swimming baths, and a concert hall. Although a Unionst, he was offered the Lord-Mayoralty of Dubin in 1909. In 1919 he was made an earl.

Ken Wood Mansion, together with its

pictures and furniture, were bequeathed in 1928 by i., for the benefit of the public;

Ivan V. (1666-1696), became tear in the endowment fund are controlled by 82, and was associated in power with trustees. There are 68 paintings, including representative pictures by Boucher, Crome, Cuyp. Gainsborough, Frans Hals, Hoppner, Landseer, Lawrence, Morland, Van Ostade, Raeburn, Rembrandt, Rey-

van Ostale, Rasburg, Remorald, Rey nolds, Romney, Rubens, Turner, Van Dyck, and Vermeer. Ivel, tributary of the Great Ouse, flow-ing N.E. and N. through Bedfordshire, England. The confluence is at Temps-ford. Length 30 m.

Iverna, see HIBERNIA.

Ives, Frederic Eugene (1856–1937), Amer. photographic inventor. At age of eighteen was put in charge of the photographic laboratory of Cornell Univ.; so remained till 1878, when he invented the first half-tone process; invented the process in 1886. He also invented in 1894 the photo-chromoscope which a single positive image in natural colours is produced by a combination of three negative ones. The reader is recolours is produced by a combination of three negative ones. The reader is re-ferred to I is own publications for the best account of his work. These include Iso-chrimatic Photography (1886), and A New Principle in Heliochromy (1889). Iveston, vil. in the co. of Durham, Eng-land, situated about 9 i m. N.W. of Dur-ham. Pop. about 6000.

ham. Pop. about 6000.

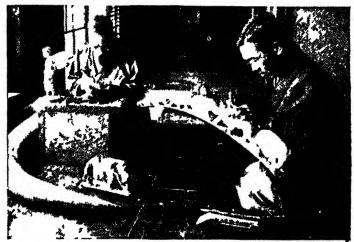
Ivinghos, vil. of Bucks., Eng., 9 m. from Aylesbury. It has a fine lifteenth-century church. I. Beucon (762 ft.) and roin Aylestony. It has a fine intesting century church. I. Beacon (762 ft.) and Ringshall or I. Common were acquired by the National Trust in 1926. I. mill, between I. and Pitstone, 3 m. N. of Tring, Herts, is probably one of the oldest remaining post-mills in Eng. It is preserved as a historic landmark.

Iviza: (1) One of the Balcaric Isles, stuated in the Mediterranean Sea, between 50 and 60 m. from the coast of Spain, to which country it belongs. This is. has a much indented coast and a mountainous and well-wooded interior. The

chief productions are fruit of various kinds and sait. Pop. 23,500. (2) The cap. of the above is. It is a fortified tn., and was the see of a bishop. Pop. about 6500. Ivory, term properly given only to the material which forms the tusks of ele-phants and is 'that modification of den-tine, or tooth-substance, which in transverse sections or fractures shows lines of different colours, or strize, proceeding in the arc of a circle, and forming by their decussations minute curvilinear lozenge-shaped spaces' (Sir Richard Owon, Lectures, 1856). These tusks are sometimes of tremendous size, a single specimon oc-casionally weighing 200 lb., and are dis-tinguished from the teeth of most animals in that they are imbedded in semi-solid wascular pulp, and continue to grow in size during the whole life of the elephant. The turn ivory is often extended to a similar substance obtained from the walrus, narwhal, hippopotsimus, etc. The I. from the African elephant is the most estremed on account of its superior denno 1225 by 1., for the benefit of the public; estream a on account of its superior defi-tegether with an endowment fund of \$250,000. He also bequeathed the grounds is also obtained from India, Ceylon, and park of some 74 ac. to the public. The Burna, and the is. of the K. Archipelago. Burna, and the is. of the K. Archipelago. In African elephants both the males and L.C.C.; the Mansion and its contents and females have tusks, although those of the sity and whiteness, but a certain amount is also obtained from India, Ceylon, Burma, and the is of the K. Archipelago. In African elephants both the males and

males are larger, but in the Indian species the females are practically tunkless The 'fossil' I obtained from the extinct mam moth in Siberia is too brittle to be of much moth in Siberia is too brittle to be of much value. Antwerp is the chief market for I I. is valued according to the size and soundness of the tusks The natives have discovered the superior value of newly obtained tusks, and paim off a large quantity of 'dead' I, which has been buried for centuries, upon unwary traders The special qualities of I, its beautiful texture and tints, its perfect elasticity and adaptability to the carver's tools, have been recognised from the earliest times,

seals, hunting-horns, knick-knacks, snuffseels, hunting-horns, knick-knacks, snur-boxes, toilet combs, mirror cases, chess-men, and draughts. Prehistoric man used pices of bone, horn, and ivory for his sketch book and scratched on it drawings of animals. The anct Egyptians and Assyrians used ivory for domestic pur-poses and for the decoration of furnture, but Egyptian ivory statuettes have also been found The Gkz used ivory for the decorations on the trappings of their decorations on the trappings of their horses and for the bosses of their shields and for small boxes and caskets, but we possess few examples of Gk. especially of the early period Of Rom.



I rim In Lotus Land by H I onting JAPANESE IVORY CARVERS

and examples of carved I dating from the prories we have a great number of contime of Moses are still in existence. Vege able I is the name given to ' Corozo Nuts. the hard white, potato like endosperm contained in the seeds of the paim like tree (Phytelephus mucrocarpa) which grows in the low hot valleys of the Andes valued at about \$10 a ton, and is used for buttons, etc. For another substitute for L. see CELLULOID See A. Maskell, Ivortes, 1906

Ivory Carving Since earliest times ivory has been used either alone or in con decorative material Ivory has always been used considerably for the decoration of palaces and the Roms sent an ivory throne to Porsena, while, in the nine teenth century, an Indian Prince sent one to Queen Victoria. Ivory has also been used a great deal for religious purposes in

and plaques which are beautifully carved in relief. The subjects of these carvings were usually classical myths or pictures of Rom gods. The carliest Christian ivories in existence date from the time of Constantine and among these we have and book covers hyrantine lyories are very numerous and beautifut, and if the figure of Christ, so often portrayed, is indicated to be sterrotyped the decorative designs of these is one are excellent. Up to the end of the fourteenth century, lyory carvings were usually of religious subjects, although often used for secular turposes, but after this date hunting turposes, but after this date hunting scenes deeds of chivalry and pictures of tournaments were depicted, the sculptures being influenced by the romantic literature of the period. In India, wory has been much used for caskets, many of such things as crucifixes, the heads of pass such things as crucifixes, the head suc

than beautiful, and consist chiefly of claborately carved balls and models of victory of Henry IV. of Navarre over villas. Jap. ivories are usually vory mall, but very well designed and finished. Most Jap. ivories are comparatively modern. In modern times ivory has been used for soulpture, cither alone or in conjunction with bronze and jewels. One modern example of ivory sculpture that may be mentioned is the 'Lamia' by George Frampton. This piece is the bust and a woman. The face is life-size and which climbs by means of its rooks, bears modern example of ivory sculpture that may be mentioned is the Lamia by George Frampton. This prece is the bust of a woman. The face is life-size and carved out of ivory, while the head-dress

and dress are of bronze. lvory Coast, Fr. colony on the W. coast of Africa, bounded on the S. by the gulf of Guinea, W. by Liberia and Fr. Guinea, N. by Upper Senegal on Niger, and E. by the Brit. colony of the Gold Coast. The low beyond which the ground rises from a general height of about 1000 ft. to the plateau of the Kong ter. (4757 ft.), which is largely covered with almost impenetable neglectors. is largely covered with almost impenetrable, primerval forest, intersporsed with patches of savannah. The rivs are of little importance, and all drain into the guil of Guinea. The chief products are maize, plantains, rice, bananas, pineapples, limes, and other fruits, all of which are cultivated by the natives; and rubber, ecceptuate covers the production of which coco-nuts, cocoa, the production of which is fostered by the Fr. for the export trade. is fostered by the FT. 107 the export trausc.
There are also mahogany forests. The exports, comprise chiefly paim kernels, paim oil, cacso, rubber, mahogany, cotton, and cocoa. The imports are chiefly tobacco, wines, and metal and cotton goods. The seat of administration, previously at Bingerville (native Adjame), with a European non. of only about 100. with a European pop. of only about 100, has been transferred to Abidian (pop. 26,000). The ports are Grand Bassain (in the neighbourhood of which some gold is found), Assinie and Grand Lahou ; other chief to. in the interior, Dimbokro, Aboisso, Onagadougou (16,500), Bobo-Dioulasso (18,600) and Bouaké, From Dimbokro, Dioulasso (18,600) and Bouake, From Abidjan a railway runs N. to the oil and rubber dists., as far as Taffré. a distance of 300 m., and it is now proposed to extend this to the Niger. There is a large network of roads suitable for motor traffic (11,000 m.). There are six wireless stations in the colony. The colony was estab. In 1899, the coast having been set-tied in 1843, and the 'huterland 'in 1883. In 1933 a part of Upper Volta was added in 1933 a part of Upper voits was added to the I.C. Area approximately 180,000 sq. m. Pop. 4,056,000. (Europeans, 3,800). See T. J. Clozel, Dix ans a la Côted' Ivoire, 1908; R. Villanour and Inchmond, Notre Colume de la Côte d'Ivoire, 1903; and La Côte d'Ivoire, 1908; G. Hanotaux, L'Empire colonial français, 1929.

Ivory, Vagatable, see under Ivory.

Ivrea, tn. in the prov. of Aosta, Italy.

It is situated about 38 m by rail N.E. of It is situated about 38 m by rail N.E. of Turin, on the Dora Baltea. This tn. possesson many interesting buildings, among which may be mentioned the cathe-dral and the old castle. The anct. Ln. was in Hom. times a place of importance. The modern tn. has manus. of silk goods. Pop. (commune) 11,300. Ivry-la-Batallie, tn. in the dept. of Eure,

which climbs by means of its roots, bears



two forms of leaves, and has small flowers which secrete a great deal of honey and are therefore pollinated by insects. The ground-ivy, or Nepeta Glechoma, is a species of Labiates unailled to the common

lybridge, small tn. of Devonshire, England. It is situated in the valley of the Erme, about 10 m. N.E. of Plymouth, and has paper mills. Pop. (1931) 1600.

Ixelies (Flemish Elsene), tn. of Brabant,

Buguun, and a suburb of Brussels, in the S E. of the city. It has manufs, of furnture, porcelain, pottery, organs and chemicals. On its ter, are the restored abbey of Ter Kameren, occupied now by the Belgian Cartographic Institute, and the modern building of the National Radio Institute. Pop. 90,700.

ixia, genus of iridaceous plants, con-sists of two dozen species, all of which are natives of S. Africa. Sev. are cultivated

natives of S. Africa. Sev. are cultivated in liritain for the beauty of their flowers. Ixiolirion, genus of amaryllidaceous plants, is indigeneus to W. Asia. There are only two species, and of these I. kolpukowskianum is cultivated in Britain. Ixion was, according the Gk. legend, king of Thessaly, son of Phlegyas, and husband of Dia All men shunded him when he murdered his father-in-law, but Zeus in pity bore him to Olympus. I., however, abused the god's hospitality, and atrove to seduce his wife. By embracing a cloud, which he believed to be Hera, he became father to the Centaurs. Zeus became father to the Centaurs. Zeus

punished his treachery by binding him in hell to a flery wheel of perpetual motion. Ixmiquilpan, th. in Mexico, in the state of Hidalgo, is 80 m. N.W. of the city of Mexico It has valuable silver mines. Pop. 13,000

ixodides, see Ticks.

Ixora, genus of rubiaceous plants found in tropical countries, and the species which number about one hundred, are evergreen shrubs.

Iyar, eighth month of the Jewish year (April-May). Izabai: (1) dept. of Guatemala, Central America, on the Caribbean coast It is low and unhealthy, with extensive forests. (2) The cap. of the above proventuated on the S. shore of Lake Izabal. Pop 5100.

izamal, tn. of Yucatan, Mexico, 50 m. E. of Merida. It has many anet, ruins, which are visited by Indian pilgrims

Pop. 6000

izard, name of a chamois (Rupi capra tragus) indigenous only to the Fyreness It closely resembles the chamois of the been used as convict settlements.

Alps, but is both smaller and ruddler in hπe.

Izdubar, or Gilgamesh, the name of a hero in a Babylonian epic. See GILGA-MINII EPIO.

Izegem, city in W. Flanders, Belgium, 20 m. S of Bruges. Engaged in agricul-ture and manuf. of linen, footwear, wool len goods, lace, chicory, bristies, and chocolate. There is an active wholesale trade in fax. Pop. 16,700.

Izhevsk, or Izhevsky, tn. in the Udmurt

Autonomous Republic of the R.S.F.S.R., 14 m SW. of Perm; it has iron works.

Pop 175,700.

Izmail, a region of the Ukrainian S.S.R.

Izmail, a region of the Ukramian S.S.R. Izmair, see Suyrana.

Iztaccinuati (Aztec, white woman) extinct volcano S.E of Mexico City. It is joined by a ridge to Poporatepeti (q.e.).

Izu-no-schichi-to (the seven is. of Izu) lie > of Tokyo Bav, Japan. They are volcanic is., three craturs are active, and Izu-no-Oshima has a well known smoking selveno (Mibers 2500 ft.) The is have

volcano (Mihara, 2500 ft.) The is. have

J, tenth letter of the Eng. alphabet, is one of the few permanent additions of the Middle Ages to the Sentiti-Cik.-Lat. alphabet. In exact terms, it was not an addition, but a differentiation from an existing letter. I in Lat., besides being a vowel, had the consonant value of y, as in index and major. The symbols i and j, a lengthened form of i with a curve to the left, were used in the carly Middle Ages indifferently for both the consonant and the vowel sound, the sign j being used in hands current at this time. At a later stage, from the fourteenth century onwards, the symbol j was used for distinctive purposes, particularly when I had to be written initially or in conjunction with another i. The sound j (dsh) came into England through Fr., where it had changed in sound from y to sh, cf. Fr. juge which became Eng. 'judge,' but the Lat. value of j as y may still be found in words of Heb. or cheer origin, as halletujah, junker, and so forth. In Fr. the sound sh was also represented by g. Consequently, such words, in passing into Eng., 'y sex,' This accounts for variations in the spelling of words like 'judge,' have an alternative spelling of words like 'gad '-' jail,' 'gibe'.' Jewes,' This accounts for variations in the spelling of words like 'gad '-' jail,' 'gibe'.' jibe,' 'Geoffrey'-' Jeffrey,' 'serjeant'.' sergeant,' and so forth.

Jabal, see JUHAL.

Jabal, see JURAL.

Jabalpur, or Jubbulpore: (1) The most northerly div. of the Central Provs., India, and also a dist. Area 18,950 sq. m. Pop. 2,100,000. (2) The cap. of above div., 150 m. N.E. of Nagpur, near the Nerbudda R. Formerly the Great Indian Peninsular railway ended here, and the E. Indian railway system began; but between 1920 and 1930 the Great Indian Peninsular railway took over the railway between J and Allahabud and the junction of these lines is now at the latter in It is also a commercial city and manufs cotton goods, tents, and carpets. Pop 125,000.

Jabary, or Javary, riv. in S. America, a trib. of the Amazon, joining it near Taba tinga after a course of 400 m. It forms part of the boundary between Brazil and Peru, and is navigable for 300 m. Jabbok, mt. stream of Gilead, E. Pales-

Jabbok, mt. stream of Gilead, E. Palestine, is one of the prin. tribs. of the Jordan. It rises in Jehel Hauran and enters the Jordan 30 m. above the Dead Sea It has many scriptural associations, and is first mentioned in connection with the meeting of Jacob and Evau. It is now called Mahral-Zarka, from the fortress of Zarka which stands on its banks between Damascus and Mecca. Its length is 110 m. Jabes, sec. Jayra.

Jabesh-Gilead, city of Gilead in Pales - motionless on tree and are t tine, E. of the Jordan, is important in religious hist. According to Josephus it species is the Jacamerops grandis.

was the metropolis of the Gileadites. Here Saul and his three sons were buried. The site is now uncertain.

Jabiru, or Mycteria, genus of birds belonging to the Stork tamily (Ciconidea). The Amer. J., which is found from the Argentine northward to Mexico, stands sometimes as much as 5 ft. high, has pure white plumage except for a black neck and head, and massive, slightly-upturned bill. Other species occur in India, Australia, and Africa.

Jablonec nad Nisou (Ger. Gablonz), tn. of Crechoslovakia, situated in the N. of Bohenna, about 7 m. S.E of Reichenberg. It is famous for its trade in glass and artificial gerns. It also has textile industries, paper mills, and printing estabs. Pop. 34,000.

Jablonica (or Jablonitza) Pass, in the Carpathian Mts., due W. of Cernowitz (Ternauti). During the First World War the Russian S. Army captured this important pass in Aug. 1916, a movement which had some influence upon Rumania's participation in the war on the side of the Entente. The pass is now in the Ukrainian S.S.R.

Jabneel, tn. in Palestine, between Joppa and Ashdod, 3 m. from the Mediterranean. was an anot. Philistine stronghold. It was taken by the Israelites and played an important part in Jewish hist. It was conquered by the Maccabeans and became the centre of Jewish scholarship The sittings of the Sanhodrin were held here after the destruction of Jerusalem. Near the modern vil., Yabna, built on the auct. site, are the remains of a fortress built by the Crusaders. The Jabneel mentioned in Joshua xxi, 13 is situated S.W. of the sea of Galilee.

Jaborandi, native Brazilian name for a number of drugs prepared from sev. rutaceous plants, but parteularly from the leaflets of Pilocarpus pennalifolius. The leaflets, when dried, an valuable for their slalagogue and diaphoretic actions. Phey contain two alkaloids, pilocarpine and jaborine, a volatile oil and a bitter substance. The effect of J. is to produce muscular relaxation, salivation, and perspiration.

Jaca, fort. tn. in Spain, in the prov. of Huesca, on the Arragon, 66 m. N.E. of Saragossa, with a famous old cathedral. Pop. 5000.

Jacamars, little-knewn species of birds, found in the dense tropical forests of S. America, E. of the Andes, and classed in the family of the Gaibuildæ. The golden, bronze, and steely lustre of their brilliant plumage, and the length and sharpness of their straight bills, are their chief characteristics. They are usually seen sutting motionless on trees and are therefore counted dull and supid. The largest species is the Jacamerops grandis.

Jacana, or Parides, family of birds whose most striking feature is the length of their toes and claws, which enables them to travel on the fist leaves of water-lilies and other riv. plants. Their eggs illies and other riv. plants. Their eggs are a rich olive-brown, usually streaked with dark lines. The common J. (Parra



jacana) of Brazil is black with green plumage on the wings and a warm-brown neck. In habit it resembles a water hen. The Hydrophasianus, or pheasant-tailed J., frequents the marshes and lagouns of India and China and 14 the largest of all the genera.

Jacaranda tree, genus of Bignoniacee, found in tropical America, consists of found in tropical Alterica, consists of about thirty species which are noted for their heavy, fragrant wood; these are also frequently known by the name of rose-wood. J. oralifolia, the green ebony, and J. mimosifolia, a native of Brazil, are

common species.

Jacobus, or Hapale jacobus, name of a species of Primates belonging to the family Hapalides or marmosets; they are small monkeys found in S. America; their fur is soft and their general appearance aguirrel-like; the tall is ringed, longer than the rest of the body, and not pre-hensile. They are arboreal and feed on insects and fruits.

insects and fruits.

'J'Acouse': (1) title of a famous open letter, written by Emile Zola to the President of the Fr. republic and pub. in L'Aurore, in which he fiercely exposed the official attempts to burke the facts in the notorious Dreyfus affair (2r.). The letter was pub. on Jan. 13, 1898, just after the acquittel of Esterhazy, and Zola was in consequence prosecuted; and though defended by Labori and Albert Clemenceau (brother of Georges Clemencau), he was convicted and sentenced to a year's imconvicted and sentenced to a year's imprisonment. He subsequently took restant on a Carolina for a Ger. pamphiet by Dr. Richard Greitle U.S.A., and still to-day, with Thomas of a Ger. pamphiet by Dr. Richard Greitle U.S.A., and still to-day, with Thomas Jefferson, one of the patron saints of the ling, pub. at Lausanne in April, 1915. It

is a strong indictment of the Ger. ringleaders who were accused of being responsible for bringing about the war, and is an illuminating commentary on Ger. mentality, placing in a dazzling light the responsibility for the general attack on European liberties. The paniphlet repeats Liebknecht's accusation (manifesto of Dec. 2, 1914) that the whole outbreak was a question of an avoidable war formented by the war parties of Germany and Austrie, and that Germany and Germany alone could have made Austria listen to the voice of reason. The book charges Bethmann-Hollweg with high treason for that on Aug. 14, 1914, he lied with effrontery to the Ger. people in proclaiming to the Reichstag that the war into which he was forcing it was a defensive war. It goes on to say that the prin. culprit was the Kaiser, on whose volte-face executed since 1910—when the Emperor seems to have been a friend of peace—it passes sentence of dishonour.

Jacinth, see HYACINTH. question of an avoidable war fomented by

Jacinth, see HYACINTH.

Jackal (Turkish chukdi, Persian shagha),
name applied to many species of the genus
Cunts, but is properly restricted to Cants
aureus, which is a woldsh, wild, dog-like
animal found throughout S. Asia and E. Europe. In colour it is a grey-yellow, the back being darker than the belly. The tall is bushy; the teeth and round eyetail is obsny; the techn and round eye-pupils resemble the dog's, and its length is some 2 ft. or, with the tail, 3 ft. The shrick of a J. is even more dismal and hideous than a hymna's, and the Arabie name Deeb (howler) is certainly appro-priate. The common food of Js. is poultry and small mammals, but as they positry and small mammals, but as they are fond of marauding by night in packs of 200 or so, they sometimes carry off sheep and antelopes. Other species besides the common J. are the Egyptian wolf (C upaster), the striped J. (C lateralis), and the J. wolf (C untus), Jack-s-lantern, popular name of Ignis fature (a m)

fatures (q.v.).

fature (q.v.).

Jackass, Laughing, name given to the species of Dacelo, a genus of coraciform birds. See Laughing Jackass.

Jackaks, Daw, or Corrus monestic, species of crow. It is smaller than the rook and rarely exceeds 14 in. in length. The plumage is glossy black with purplish wings. Usually it lays five bluish-white ever motthed with tiny dark brown species. wines. Usually it lays five bluish-white eggs, mottled with tiny dark brown spots, and it invariably chooses a hole in which to keep them, often the hollow of a tree, a rabhit burrow, a beifry tower, or a castle turret. It is one of the best of the bird-architects, and has been known to pile a stack of loose sticks 12 ft. high. In disposition it is remarkable for its temerity, demostlets and cunnific Smalls worms. domesticity, and cunning. Suells, worms, and insects are its thief food, indeed farmers are indebted to Js. almost as much as to rooks for the destruction of pesti-ferous insects. Js. are common residents in most parts of the world, though they seem not to be known in America.

the tn. of Monroe. Both his parents were engigeants from Ireland. Although only thirteen at the closing days of the Amer. War of Independence, he took his place in the fighting ranks. He lost his two brothers in this war, and his mother died from exposure while nursing Amer. soldiers. J., having fought his way to education and the law, migrated to what was then considered the W.—the future state of Tennessee. Here by turns he was public prosecutor, planter, storekeeper, judge, and member of Congress. When the young Amer. nation and Great Britain entered on war in 1812, the Creek Indians also made war on the Amers. J., in charge of Tennessee troops, led a punitive expedition, and defeated the Indians in two decisive battles. In the autumn of 1814 Great Britain sent Gen. Sir Edward Pakonham, with a fleet of fifty vessels and 16,000 veteran soldiers to take New Orleans. The Brit. easily sank the Amer. flotills of gun-boats and landed troops. Unknown to both sides, Great Britain and America had signed a treaty of peace. Thus, a whole series of buttles occurred rinis, a whole series of outres observed while a ship was in ind-occan hearing the good tadings. J. defeated the Brit. generals Pakenham ',' Gibbs, who were killed while gallantly leadings their troops into action. J. became a national hero, and the country turned to him in 1818 when the Seminole Indians raided Amer. ter. from the safe jumping-off place of Florida, then still a Sp. possession. J. not only defeated the Sominoles, but, against orders, invaded Florida and as a result of his action Spain sold Florida to the U.S.A. and J. became its governor. In 1823 he was chosen U.S. States Senator for Tennessee. In 1825 he ran for the presidency as a Democrat, other candidates being John Quincy Adams, W. H. Crawford of Monroe's cabinet, and the famous orator, Senator Henry Clay. J. received the highest number of electoral votes, but the decision was thrown into the House of Representatives. Clay lent his influence to Adams, who thus became president. In 1828 J. had his revenge Adams can for re-election, with J. once more the Democratic nomines. J. obtained an enormous popular as well as electoral vote. He was the first genuine self-made man of the people to become president of the U.S.A. In 1832 he was re-elected. His second term was marked re-elected. His second term was by his breaking the U.S. Bank. He hold that it had too much power, and was a corrupting influence in Amer. political life.

The bank's charter was rescinded. He The bank's charter was resonded. Its retired at the end of his second term, dying a lonely old man at his residence, the Hermitage, near Nashville, Tennessee, on June 8, 1845. See life by J. S. Bassett. 1916, and A. M. Schlesinger, The Age of

1916, and A. M. Schlesinger, The Age of Jackson, 1945.

Jackson, Sir Barry Vincent (b. 1879), Eng. theatrical manager, b. at Birmingham; founder of the Pilgrim Players.
1907; founder and director of the Birmingham Repertory Theatre, 1913, which has produced hundreds of plays old and new. Provided the ana nonductions Provided the ana. productions at the Malvern Summer Festivals, 1929- in remoter parts of Central Africa.

37. A Governor of the Old Vic, Sadler's Wells and of Stratford Festival Theore; awarded Gold Medal of the Birmingham Civic Society, 1922. Pubs.: Fificila (with Basil Dean), 1911; The Christmas Party, 1913; The Marriage of Figaro (new adaptation), 1926; Demos, King and Slave (adaptation) 1931. Knighted, 1925. See T. C. Kemp, The Burmingham Repertory Theatre; The Playhouse and the Man, 1913, 1918.

1913, 1918.

Jackson, Sir Francis Stanley (1870-Jackson, Sir Francis Stanley (1870-1917). Eng. politician, governor and cricketer, younger son of the first Lord Allerton, one-time (bief secretary for Ireland. Educated at Harrow and Cambridge Univ. He had a distinguished parl career, entering Furlament in 1915 as Conservative member for the Howden. as Conservative memor for the interest shire Div. of Yorkshire and reaching the chairmanship of the Unionist Party organisation in 1923. Was governor of Rengal, at the time of the Montagu-Cheimsford constitution, in 1927–32 during the height of the terrorist menace. but when he was succeeded by Sir John Anderson the difficult political situation had been mitigated by his firmness and courage. But it is as a cricketer that he will be best remembered. He was in the will be best remembered. He was in the Cambridge eleven (captain, 1892-93), captain of the Yorkshire eleven, succeeding Lord Hawke as president of Yorkshire Cricket Club; and repeatedly played for Gentlemen v. Players and All-England test teams. Other activities prevented him from ever going to Australia, but his record against Australia in test matches in England more than anything revealed his talents as an all-round player of the in England more than anything revealed in talents as an all-round player of the first class. In all be played in twenty test matches, making 1412 runs with an average of 48 runs per limings. Yorkshire was champion oo, during his epoch in 1946, 1895, 1909, 1901-2 and 1905. In trentemen v. Players matches at Lords, I played 18 innings for an average of 34. J played 18 innings for an average of 34. In 1904, when he and S. M. J. Woods of comersotalize bowled unchanged, the Players were dismissed twice, for 103 and 107, J. taking 12 wickets for 77 runs, the best performance of his cricketing career. has performance of his cracketing career. Against Australia at Leeds he took 9 wickets for 42 runs. As a 'atsman of the quick-footed type he had no superior, but above all he supplemented his gifts of defence and clean hitting with a temperament admirably suited to any situation; and when he retired from first-class cricket often 1905 he was admired by some as after 1905 he was adjudged by some as perhaps the greatest crucketer in England.

Jackson, Frederick George (1860–1938),
Brit. explorer. For some months he

travelled in Australian deserts; and in 1893 he journeyed on a sledge in mid-winter across the foren 'tundra' of 'bleria, which lies letween the Ob and the Perhora. The Great Frozen Land (1895) i- the narrative of his adventures on this occasion; and in the same way A Thousand Days in the Arcic (1899) gives the results of the Jackson-Harusworth Polar Expedition to Franz Josef Land, which he commanded. Crossed Africa Beira to Banana Pt., 1925–26, and made journeys in remover parts of Central Africa.

Jackson, Helen Maria (1831–85), Amer. authoress, was the daughter of a prof. at Amherst College, Massachusetts. Emerson expressed his admiration for her meditative Verses, which were pub. in 1870. Her best work of fletion is Ramona (1881), which contains an admirable appreciation of Indian character and life. In A Century of Inshonour (1881) Miss J. Issued a spirited denunciation of the govs. dealings

with the natives.

Jackson, Holbrook (1874–1948), Eng. writer and bookman, b. at Liverpool, self-educated. He started earning a livelihood in commerce at the age of fitteen. He had however determined on a writer's He had however determined on a writer's career and entered journalism in 1907, becoming joint-editor with A. W. Orago of the New Age. He also contributed as a freelance writer to most of the leading periodicals of the day. In 1910 he was associated with T. P. O'Connor in the latter's pubs., and became editor of T.P.'s Weekly (1911-14). From 1917 to 1923 he was both owner and editor of a literary jour. To-Day. In addition to his interest in literature and book-collecting he was an literature and book-collecting he was an acknowledged authority on various business matters, and from 1917 until his death he was editorial director of the National Trade Press Ltd. He was also chairman of the Brit. Colour Council, 1933-34, having interested himself in cashions in colour and their introduction. The first pub hook was an essay on Ed. His first pub. book was an essay on Edward FitzGerald with a bibliography (1899). He was the first to write a full-(1899). He was the lift to write a full-length study of Bernard Shaw (1907) and also wrote a biography of Wm. Morris (1908). His book Eighleen Nineties (1913) is a standard work on the period. An authority on book production, he col-laborated in A Brief Surrey of Printing (1923) and was author of The Printing of Rocks (1939). (1923) and was author of The Printing of Books (1938). His wast knowledge, technical, literary, and antiquarian, his love and care of books were the resources out of which he wrote his Anatomy of Bibliomania (2 vols. 1930–31), a work modelled on Burton's Anatomy of Melancholy. His pub. vols. of essays include Southward Ho! pub. vols. of essays include Southward no (1914), Occasions (1922), Essays of To-day and Yesterday (1928), and Maxims of Books and Reading (1934). His Dramers of Dreams (1948) contains studies of a number of Eng. and Amer. writers of the

Jackson, John (1769-1845), Eng. pugilist, son of a London builder. Fought only ust, son or a London builder. Fought only three fights, defeating Fewterel, at Croydon, in 1788, in the presence of the Prince of Wales; defeated by Ingleston at Ingatestone, 1789, through breaking bones in a fall; defeated Mendoza at Hornchurch, 1795. Champion of England till retirement in 1803. Known as 'Gentleman Jarkson.'

man Jackson.

Jackson, Sir Thomas Graham (1835-1924), Eng. architect; b. at Hampstead; son of Hugh J., solicitor. At first intended to become painter; but entered Sig G. Gilbert Scott's office, 1858. Much of his work was restoration, and nearly all of it was devoted to scholastic or eccles. buildings. In Oxford he designed the new

Examination Schools, the new Radoliffe Library, and extensions to Brusenose, Corpus, and Balliol; in Cambridge, the Sedgwick Memorial Museum, the Law Library, and the Physiological Laboratory. He also designed new buildings for many public schools, including Eton, Rugby, and Harrow. Specimens of J.'s restorative skill may be seen in Great Malvern Priory, and in Winchester Cathedral (for which he received a baronetcy in 1913), and there is a new church of his at 1913), and there is a new church of his at Aldershot. R.A., 1896. Books include: Modern Gothic Architecture (1873), Reason in Architecture (1996), Gothic Architecture in France, England, and Italy (1915), The Renaissance of Roman Architecture (1921-

Jackson (Stonewall), or Jackson, Thomas Jonathan (1821-63), Amer. Confederate general, b. in Harrison co., Virginia. Of mixed Scottish and Irish descent, he was essentially the type of man who formed the essentially the type of man who formed the backbone of the people of the middle states of America. Educated at a small prov. school, he was severly handleapped when he entered W. Point Academy; but he overcame the limitations of his early schooling by pertinacity. He began his military career as an artillery licutenant, and won distinguished himself in the war grants the Mayleans carring in Moreans. against the Mexicans, serving in Mag-ruder's Battery and being breveted captain for his gallantry at Contreras and at Cherubusco (q.v.). But after this war he resigned his commission and took the post of prof. of military science and mathematics at the State Univ. of Virginia. His participation in the civil war is easily explained by his sturdy advocacy of State rights, involving the support of Virginia's slave laws and her right to secode from the Union. Hence, when the war broke out between the Federal and Confederate States, J. was given a command in the S. Army, and at once proved himself to be an efficient and enterprising officer. At an efficient and enterprising officer. At the battle of Bull Run he commanded a brigade, and the dour defence made by him and his troops earned him the celebrated sobriquet of 'Stonewall' (1861). In the course of the famous Shenandeah Valley campaign (1862) he succeeded in defeating the three Federal detachments under Banks, Frement, and McDowell, and later in inflicting a second defeat on and later in inflicting a second defeat on Banks at Cedar Run, near Culpeper, Vir-gula. During the Maryland campaign he obliged 11,000 Federals to surrender in Harper's Ferry and his corps at the tough Harper's Ferry and the corporation fight of Antietam rendered yeoman service to the embarrossed Lee. Fredericksburg to the embarrassed Lee. Fredericksburg and Chancellorsville (1803) were his last two battles. At the latter he was thrice wounded and shortly afterwards died. To his soldiers he was a very Napoleon, but with his rare gift for inspiring popularity was combined the intense religious fervour of Cromwell. Stonewall Jackson, The Good Soldier, by Alfan Tate, 1930, is a critical study of his generalship.

Jackson: (1) City in U.S.A., co. seat of

Jackson : (1) City in U.S.A., co. scat of Jackson co., Michigan, is on the Grand R., 68 m. W. of Detroit. It is a railway centre, and coal is obtained close by. There are flour and paper mills, foundries,

and breweries. Soap, machinery and 1902. At the outbreak of the First World chemicals are the prin. manufs. Michigan War he went to France with the Meerut chemicals are the prin. manurs. Michigan State Prison is situated here. Pop. 49,600. (2) Co. seat of Madison co., Tennessee, 75 m. E. of Memphis, is on the Forked Deer R. It is the seat of the S.W. Baptist Univ., founded in 1871. It carries on an important cotton trade. Pop. 24,300. (3) The cap. of Mississippi, is on the Pearl R., 45 m. E. of Vicksburg. It contains fine public buildings, including the state house with its valuable library. the state house with its valuable library, and sev. charitable and technical institutions. Manufs. of machinery and agric, implements are carried on. Pop. 62,100. (4) The co. seat of Jackson co., Ohio, is 108 m S.E. of Springfield. It is the centre of an iron and coal producing dist. Pop. 6200.

Jackson, William (1730-1803), Eng. musical composer, studied music under the organist of Exeter Cathedral and later under Travers, then organist of the Chapel Royal, London. His Elegies and other part-songs, especially Time has not thinned my flowing hair, and the tender melodies in his opera, The Lord of the Manor (performed at Drury Lane in 1781),

still delight music lovers.

Jacksonville: ,1) Cap. of Duval co., Florida, U.S.A.. and situated on the St. John's R. This city, which is an important railway centre, is well built, possessing many large buildings, while its streets are wide and shaded with trees. It is also a resort for winter visitors, and an important trading place, exporting and importing very largely. It has a natural harbour with a 30 ft. channel at low tide. It has with a 30 ft. Channel at low tale. It has numerous factories, iron foundries, and engineering works. It is a seat of a Confederate Soldiers' Home, and a National Marine Hospital. Pop. 173,100. (2) The cap. of Morgan co., Illinois, U.S.A., stuated about 33 m. W. of Springtield. In this tn. are situated sev. culcational institutions, among them the Illinois College. stitutions, among them the Illinois College Cliesenting), the State Conservatory of Music, and Illinois College for Women (Mothodist). Pop. 19,800.

Jacmel, seaport of Huiti, situated on the S. coast, 30 m. S.W. of Port-au-Prince. The vessels here anchor about

half a mile away from the shore. Exports

Jacob, also called Israel, son of Isaac and Robekah. He was one of the three great Heb. patriarchs whose histories are recounted in the Book of Generis. His twelve sone are applied of a them. twelve some are spoken of as the ance-tor-of the twelve tribes. J.'s death took place in Egypt whence he was carried to Hebron for burial. Cheyne considers his name to be that 'not of an individual, but of the

imaginary ancestor of a tribe.

Jacob, Sir Claud William (1803–1948),
Brit. soldier, son of Major-Gen. Wn. J.,
educated at Sherborne School and R.M.C.,

Div. and was the only Indian army officer of the Corps to rise to high command there. of the Corps to rise to high command there. In 1915 he led the Dehra Dun Brigade at Neuve Chapelle and at Aubors Ridge. Commanded II Corps for the remainder of the war: during the Somme Battles, 1916, when he took Thiepval (2.v.) by a well-planned assault; at the Anore operations and the pursuit of the Gers. to the Hindenburg Line, 1917, and at the third battle of Ypres; and in Flanders in the flual Allied advance to victory in 1918. In 1920 he returned to India on his appointment as Chief of the general staff. In 1924 he was given the N. Command in India. From 1926 to 1930 he was military secretary at the India Office. In 1927 he was appointed Colonel of the Worcester-hire Regt. From 1916 to 1933 he was Colonel of the 1st/4th Hazara Pioneers, which body he had formed in 1904 for work on the N.W. Frontier communicawork on the N.W. Frontier communications. His last official post was Constable of the Tower of London, 1937-43. High as he rose, he narrowly missed reaching the highest positions on two occasions: the first was during the First World War when, as a Corps commander, he was seriously considered as successor to Haig as Commander-in-chief on the W. Front; and p. 1924 when the pest of Commander and in 1924 when the post of Commanderin-hief in India seemed likely to be offered to him, but the choice fell instead to Sir Wm. Birdwood. A soldier of much practical sense and high moral courage, with a great talent for commanding men.

Among his many decorations he had the Amer. Distinguished Service Medal.

Jacobadad, tn. of Upper Sindh, India. It is situated 45 m. N. W. of Shikarpur, and has cantonments. It obtained its name from Gen. John Jacob, its founder. Pop.

10.000.

Jacobean, term applied to architecture and furniture of the reigns of the Stuarts (1603-88), though strictly only to those of the time of James I. J. furniture is generally of heavy oak, skilfully carved. Panelling is characteristic of the interior

of the typical J. house.

Jacobi, Friedrich Heinrich (1743-1819), Ger. philosopher, b. at Dusseldorf, studied at Frankfort and Geneva. In 1807 he was made president of the Academy of Sciences at Munich, where he d. His philosophical work was not original in nature, but consisted in keen criticism of the systens promulgated by others. He was largely responsible for drawing attention to the philosophy of spinoza by his letters to Mendelsshon, Ceber die Lehre des Spinoza (1785), and compared Hune with Kant in his work Parid Hune über den Ulauben oder Lehre werd Perikanen. imaginary ancestor of a tribe.'
Jacob, Sir Claud William (1803–1948),
Brit. soldier, son of Major-Gen. Wm. J.,
Sandhurst. Entered the army in Worcestershire Regiment in 1882 and transferred
tershire Regiment in 1882 and transferred
Colonel, 1911, Major-General, 1916, Lleut.
Gen., 1917, Gen., 1920 and Field-Marshal,
1920. First experience of active service
was with the Zhob Valley Expedition
1890. N.-W. Frontier campaign, 1901—

Kant in his work Parid Hume ther den
(lituben, oder Idealismus und Realismus
und Realismus
philosophy in Von den göttlichen Dingen
und thre Offenbarung (1811). Apart from
voldemar (1779), and Allwill's Briefsammlung (1799). His collected works
vore pub at Leipzig in 1812–24 in six
vols. See O. Zöppritz, Aus F H.
Jacobis Nachlass, 1869; R. Kuhlmann,
1890. N.-W. Frontier campaign, 1901—

Die Erkenninistehes Jacobis, 1906; O. F. Bollnow, Die Lebensphilosophie Jacobis,

Karl Gustav Jacob (1804-51) Ger. mathematician, b. at Potsdam, and after completing ins education was made prof. of mathematics at Königsberg, from which he retired in 1842, owing to lihealth. He is romembered as the discoverer of elliptic functions, and he helped to formulate the theory of determinants. His most important work is Fundamenta Nova Theories Functionum Ellipticarum (1829). His Gesammelte Werke were pub. 1881-91. See studies by L. Koenigsberger, 1901, and A. Kountarent 1813. Ger. mathematician, b. at Potsdam, and

113 occuments were published. See studies by L Koenigsberger, 1901, and A Kowalewski, 1917.

Jacobina, tn in the state of Bahls, Brazil It is situated in a fertile though mountainous region and has a cotton-growing and cattle industry. Pop.

growing and cattle industry. rop. 10,000.

Jacobins, Fr. political society formed during the Fr. Revolution, of persons who aimed at constitutional reform of a reasonable kind. They were called J because they used to meet in a building in the rue St. Honoré, Paris, which belonged to the Dominican order, called in France to the Dominican order, called in France the Jacobin. Afterwards the member-grew more extremist and organised the reign of terror; but their power ended in 1794 with the execution of Robespierre The word 'jacobin' was used in Britain and in Europe generally for the holders of extreme political opinions, and it was to oheck such views that the Anti-Jacobin (q.v.) was launched.

Jacobites, name given to the followers of the Stuart house after the revolution of 1688. The name is derived from the Lat. name Jacobus (James). James II had numerous followers in all the countries had numerous followers in all the countries of the Brit. Isles, but the later Stuarts, the Old and Young Pretenders, revewed their main support from the Scots. In 1689 Graham of Claverhouse roused the Highlands for James, Jought the battle of Killiecrankye, but died in the moment of victory. The Highlands were peaceful with the peace of desolation, after the massacre of Glenooe. In Ireland the Boyne had been fought in 1696 and the Irish defeated (see James III.) and Ireland also had been rought in 150 wind the first defeated (see James II.), and treland also was pacified at the edg of the sword Ireland, however, was so thoroughly subdued that during the two santsequent rebellions she pisyed no active part. The reign of Anne was one of constant intrigue reign of Anne was one of constant intrigue between the leading statesmen and the Old Pretender, and the Jacobite plot at the end of the reign failed only because of the too sudden death of the queen. In 1715, the Hanoverians having just been estab, on the throne, a Jacobite rebellion took place both in Scotland and in the N. of England. The indecisive battle of Sheriffmur, the surrender at Preston, and the somewhat depressing presence of the Old Pretender, all contributed to the overthrow of the rebellion. The prisoners taken were treated leniently, and the rebellion died a natural death. The attention of the present of the contributed to the contribute of the contributed to the contribute of the research died a natural death. The strengts to rouse opposition to the Hanoverlans by Alberoui met with no success, and it was not until the middle of the War of the Austrian Succession that the Young Pretender, 'Bonnie Prince Charlie,' landed

at Moldart with seven followers. He roused the Highlands at once, be swept roused the Highlands at Ouce, he swept away opposition at Prestonpans, and pro-claimed his father James III. He invaded England and reached Derby, but there he commenced to fall back. His march had been conducted in a great are over some 500 m. from Moidart to the outskirts of Derby, where the decision to turn back was taken at a point only 130 m. short of London. A rehellion on the defentive is London. A rebellion on the defensive is of a necessity a failure, and Charles was inally overwhelmed at Culloden. After numerous adventures he managed to escape, and died on the Continent, a weak, broken, dissolute drunkard. His younger brother became a cardinal of the Rom. Church, and thus ended the Stuart line. Every great statesman of the time had intrigued with the Stuarts, from Sunderland and Marlborough down to Newcastle hunself. In fact, when Charles reached Derby in 1746, Newcastle was undecided whether to declare for him or not. Many of the great names of the time can be written down as J, amongst them

can be written down as J, amongst them being Sanotoft. Harley, Bolingbroke, Atterbury, and later, Samuel Johnson. See Sit C. Petrie, The Jacobte Movement: First Phase, 1683-1716, 1949

Jacobs, William Wymark (1863-1943), Eng author, b. in Wapping, E. Loudon, son of Win. Gage J, a wharf manager and, thus early familiar with the types of long-shore man and sailors whose ullocynomeses shoreman and sailors whose idiosyncrasies he exploited with much success in his humorous stories. Educated at private schools, in the Savings Bank dept. of the Civil Service 1883-99 His earliest literary work was pub in the litter and Today both edited by Jerome K. Jerome, who soon recognised the merit of J's humour. Contributed to the Strand Magazine. His first vol of short stories, Vany Carpoes, was pub. in 1896. This success was followed by The Skipper's Woong (1897) and after Sea Urchins (1893) he abandoned the ('vil Service and thereafter lived entirely by his pen. J. pub about twenty vols, chiefly collections of short stories, vols, (hiefly collections of short stories, under such titles as Light Freights (1901), if Summeh Port (1902), The Lady of the Barge (1902), Odd Craft (1903), Dialstone Lane (1904), Captains All (1905), Short Cruises (1907), Sullhaven (1908), Saslore Knots (1909), Ships Company (1911), Night Wulches (1914), The Castaways (1918), Deep Waters (1919), and Sea Whispers (1926) He also wrote some oneact plays, such as Eshabishing Relations and Diron's Return. His gruesome story The Monkey's Paw marked a departure from his humorous veln; this story and some others were dramatised in collaborasome others were dramptised in collabora-tion with Louis N. Parker and successfully

played. He also collaborated in Beauty and the Barge, a three-act comedy (1906). Jacobsdal, div. of the Orange Free State, S. Africa, and the cap, of that div., situated 25 m. S. of Kimberley. Sev. engagements occurred here during the Boer war

(1839-1902). European pop. 400.

Jacobsen, Jens Peter (1847-85), Dan.
novelist, b. at Thisted, Jutland. He began as a student of botany and later trans.
Darwin into Dan. Among his works are

Marie Grubbe (1876), Niels Lyhne (1880), and a vol. of stories called Mogens (1872). Jacob's Ladder, or Polemonium corru-leum, a species of Polemoniacese found in temperate climates and of rare occurrence temperate climates and of rare occurrence in Britain. It is a perennial herb which attains a height of 1 to 2 ft. and bears blue or white flowers. The popular name is given to the plant because of the ladder-like arrangement of the leaves.



JACOB'S LADDER

Jacobstadt, or Jakabpils, tn. on the R Dwina 7 m S.E. of Riga, Estonia Fighting took place here in Sept. 1915. when the Gers were endeavouring to break through to Moscow. They achieved some success with a large force of cavalry. but a Russian counter-attack restored the position. Further ighting took place here in March 1916, when the Russian-took the offensive. In Sept. 1917, the Gers, crossed the Dwina just above J., and compelled the Russians to concentrate on that place. The Bolshevik Revolution brought lighting to a standstill. Taken by the Gers, in the Second World War, the Russeus drove them out again in

Aug. 1944.

Jacobus, gold com struck in the reign of James 1. of Fingland (1603-25), and thus named after him, J being the Lat. equiva-lent for 'James' It was of the same value as twenty-five shillings sterling, but was put out of coinage at the conclusion of that

reign. Jacopone Jacopone da Todi (1240-1306), It religious poot, b at Todi in the duchy of Spoleto. He was originally an advocate, but about 1268 turned a Franciscan, and wrote poems which display an extreme bent towards asceticism. He is an author bent towards asceticism. He is an author of the 'laude,' which play an important of the laude, which pay an important part in the development of it, drama from 1393 to 1303, Todi was imprisoned for inveigning against and satirising Pape Boniface VIII., and siding with the Colonnas in their struggles against the Pope. On the death of Boniface he was released, when it is not the particular for five years in a dim-

has been ascribed to Todi, as also many beautiful Lat. hymns. An ed. of his works appeared at Florence in 1990. See

works appeared at Florence in 1490. See lives by A. D'Ancons, 1884 and Evelyn Underhill, 1919.

Jacotot, Jean Joseph (1770–1840), Fr. educationist and inventor of the 'universal method' of education, 5. at Dijon. He became successively soldier, military secretary, and holder of various professorial chairs. It was while at Louvain that he applied his method of 'universal instruction,' closely resembling that of Hamilton. The principle of his system is that the The principle of his system is that the mental capacities of all men are equal, and

mental capacities of all men are equal, and he expounded his views in *Enseignement Universet* (1823). See the life by Guillard, 1860, and J. Tourrier's Intellectual Emancipation. A Treatise on Jacobot's Method of Universal Instruction, 1852.

Jacquard, Joseph Marie (1752-1834), hr rechanician, b. at Ouillons, near Lyons. He invented the silk-weaving loom called after him (1801-03), a mechanical contrivance capable of being adjusted to any kind of loom, and doing away with the guidance by hand. The silk weavers offered violent opposition to silk weavers offered violent opposition to his machine, and he narrowly escaped with in life on one occasion. His invention, however, revolutionsed the art of weaving, and at his death his machine was in almost universal use. Napoleon rewarded him with a small pension.

Jacquerie, name given to a revolt of peasants in 1358, the designation Fr peasants in 1358, the designation and manding from the contemptuous term is questioned by which the nobles described the peasants. Long continued oppression on the part of the nobles was the cause of the rebellion, which broke out in the neighbourhood of the Marne and Oise. Charles of Navarre led the nobles, and Meaux the peasant army, the latter being defeated with great slaughter on June 29, 1358; thus ended the insurrection. the insurrection.

Jacitation (Lat. jacitator, boaster)
The suit causa factitationis matrimonis
may be brought against one who malicto the petitioner. The object of the remedy is to enjoin properties allence upon rement is to enjoin properties stence upon that matter against the jactitator, and apparently this suit is the only remedy available for such an injury. It is a remedy inherited by the Probate, Divorce, and Admiralty div. of the High Court from the old eccles, jurisdiction of the spiritual courts, and the statute conferring that purisdiction in the Divorce Court is the Matrimonial Causes Art, 1857. Suits of J. are extremely rare, probably because the remedy is not adapted, or because the events there are no piecedeuts to show that it is adapted to establishing the validity of it is adapted to establishing the validity of the potitioner's muriage with a third per-son. There is, however, a statutory remedy under the Legatimacy Declaration Act, 1858, for that purpose which is also the appropriate remedy to estab. the

legitimacy of offspring.

Jadar (or Yadar), riv. of Yugoslavia, just S.W. of Belgrade. It was the scene after languishing for five years in a dun-geon. The authorship of the Stabet Mater of a brilliant Serbian victory over the Austrians on Aug. 20-22, 1914. The battle was fought almost simultaneously with that of Shabatz (Aug. 17), the Serbs, under their crown prince, fighting the two battles in order to prevent two huge Austrian invading armies of 200,000 men in all, which were converging from N. and W. on the military dept. at Valievo, from effecting a junction and so 'squeezing out' the whole Serb army. In this the Serbs were entirely successful, winning first the battle of Shabatz and then that of the Jadar R., their casualites being about half those of the Austrians, who lost in the two defeats some 40,000 in killed, wounded, and prisoners, besides stores, and in addition being compelled to abandon the invasion.

vasion.

Jade, ornamental stone, generally of green colour, belonging to two distinct species, viz. Jadete and nephrite, often wrongly confounded one with the other. Jadete belongs to the pyroxene group, while nephrite is a variety of amphibolo. J. is highly prized in the E., especially by the Chinese, and is found in China, Burma, and many parts of S. Asia. It was used by the prehistoric peoples of Mexico, Alaska, New Zealand, and other countries, for utensils and carvings, and on many prehistoric sites in Europe, as in the Swisslake dwellings, J. objects have been frequently discovered. Consult Dr. G. F. Kunz, (ed.), Investigations and Studies in Jade, 1906, for a full and exhastive description of the stone; also S. C. Nott.

Chinese Jade, 1936.

Jadeite, mineral species related to the pyroxenes and differing markedly from true jade or nephrite. It is a monoclinic aluminium sodium silicate, White or 'camphor' jade is the purest form, though usually specimens are coloured by the presence of metallic oxides, e.g. chromium causes brilliant green patches. Though the hardness of J. differs but little from that of jade, its sp. gr. is much higher (3.20 to 3 tl). It is much more readily tusible. Although implements of J. have been found on many prehistoric sites in Europe, it is only recently that the raw material has been found in situ on this continent, viz. in the Alps. Large stores of it have been mined since remote times in S. Asia. etc.

S. Asia, etc.

Jael, Jewish matron, wife of Heber, the
Kenite (Judges iv.), who, after the battle
on the Kishon, treacherously slew Sisera
who, at her invitation, had taken refuge
in her tent.

Jaen (1) Prov. of S. Spain, and one of the most fertile dista., being well watered by the Gnadalquivir, Segura, and other riva. It produces wine, oil, cereals, etc., and has lead mines. It was conquered by the Moore on their entrance into Spain and in 1246 fell into the hands of Ferdinand III. of Castile. Area 5200 sq. m. Pop. 809,400. (2) The cap. of the prov., situated on a trib, of the Guadalquivir, 50 m. N.W. of Granada, and 122 m. E.N.E. of Seville. It consists of an old and now the former having remains of a Moorish wall flanked with towers, and irregular, winding streets. The cathedral, on the site of a mosque, is of special interest, and

there are sev. handsome churches. Weaving and milling industries are carried on, but the silk, for which it was at one time famous, is no longer manufactured. Pop. 55.100.

Jafarabad, feudatory state in India in the prov. of Kathlawar. The chief tn. is Jafarabad, 28 m. E.N.E. of Diu, on the estuary of the R. Ranai. Pop. about 5000.

Ja'far Pasha-el-Askeri (1880-1936), Iraqi statesman, b. at Bagdad. Educated: Constantuople and Germany. Entered Turkish army, 1902. Promoted captain in Balkan War, 1912. In the First World War he was chosen to organise the troops of the Sheikh-el-Senussi; and, attempting to invade Egypt, was captured by the Dorset Yeomanry at Agagia. Feb. 26, 1916. In an attempt to oscape from Cairo citadel he injured himself; and, during incapacitation, he was converted by the reading) to the Brit, side. Joined Hejaz army, 1917, and was given the C. V. G. on the recommendation of Gen. Allenby. Governor of Aleppo, 1919. Minister of Defence in Iraq, 1920-22, and represented Iraq at Lausanne conference. Prime Minister, Iraq, 1923; diplomatic agent in London, 1925 26. Prime Minister and minister of foreign affairs, 1926-28. Minister in England, 1923-30 and also 1932-31, and called to the Eng. Bar. Iraqi Senator, 1934. Minister of Defence, 1935. Assassinated after a curp d'état in Oct. 1936.

Jaffa (anct. Japho; Ck. Joppa), second largest th. in Palestine, its pop., is estimated at 70,000. It is 5 im. by rall from Jerusalem, of which it was the port in King Pavid's time. The old parts of the th. stand on a rock dominating the harbour. J. is the headquarters of the S. dist. and the port of Jerusalem. J. was known in the time of the Crusades as Japhe, and has a long hist, both recorded and legendary. It was the reputed scene of the rescue of Andromeda by Perseus and also of the awallowing of Jonah by the whale. Its name is to be found on the tower of Thotmes II at Karnak among the cities mentioned as being overwhelmed by Pharach. Later it became a Phemician city, and then, for a thousand years, Philistine, during which time the logs for Solomon's Temple, after being floated down from the ports of Lebanon by Hiram, were landed. Under the Maccabess, J. became essentially Jewish. Then Pompey conquered it, and, having made of it a Rom. free city, gave it to Cleopatra as a love token. It afterwards became a pawn in the conflicts between the Rom. and Idunean rulers. It was in the house of Simon the Tanner in J that St. Peter saw the vision recorded in the Actaix. 43. In the Crusades, Baldwin I. signed the treaty of Jaffa with the Genoese, whonce sprang much strife. The city then became a co.; but in 1187 it was captured and destroyed by the brother of Saladin, and then retaken by Richard Cour de Lion. In 1287 it was sagain sacked, this time by Bibars, and in 1799 it was stormed by Napoleon. The strike over Jewish inmigration, formented by the Arab political leaders,

which developed into grave disorders throughout Palestine in 1936, began in J. Though of such antiquity, J. is uninteresting to the visitor. Its streets are narrow and tortuous. N. of the old city is Tel Aviv, the cap. of the state of Israel considerably enlarged through the spur of Zionist development under the Brit. Zionist development under the Brit. mandatory regime and, in contrast to Jaffa itself, strikingly modern. Oranges from inland are the chief export. There is rail connection with Jerusalem, Kantara, and Haifa over two lines, the junction of which is at Lydda. The port consists of a Customs House and jetty, and a short wharf where lighters land cargoes in smooth water.

Jaffna, or Jaffnapatam, scaport tn. on Jaffna, ls. off the N. coast of Ceylon, 116 m. from Trincomali. It has a ruined Dutch fort, an old Dutch church, and temples. Palinyra timber, tobacco, truit, rice, and curry-stuffs are yielded, and the Tamils also carry on fishing. Pop.

45,000.

Jagadhri, tn. of Amhala dist., Punjah, India, with manufs. of 170n and copper, and a borax refinery. Pop. 12,000. Jagdalak, sec. JUDDALAK.

Jagellans, or Jagellenes, royal dynasty of Poland, descended from Gedinin of Lithuania (d. 1312), founded by Jagellenes (c. 1315-131), afterwards Ladislaus II. This illustrious line ruled in Poland from 1802 (172), then with bildgranud August. 1386-1572, when, with Sigismund Augustus, the male line became extinct. Through his sister's descendants the J. continued on the throne till 1668. Rulers over Lithuania, Hungary, and Bohemia, were also chosen from the J.

Jagannath, see JUGGERNAUT.

Jagannath, see PURI.

Jagannath, see PURI.

Jagersfontein, vil. of Fauresmith div., Orange Free State, S. Africa, 67 m. W.S.W. of Bloemfontein. The celebrated Klipfontein diamond mines nearby rank next to those of Kimberley. J. is on the railway from Cape Town to Pretoria.

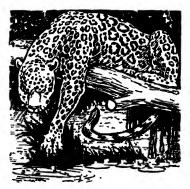
railway from Cape Town to Pretoria. Pop. 4500.

Jagger, Charles Sargeant (1885–1935). Eng. sculptor, b. near Sheffield. He trained at Sheffield School of Art and at the Royal College of Art, S. Kensington, where he went on a scholarship. Here he won a travelling scholarship and visited Rome and Venice. In 1914 he won the Rome Scholarship for Sculpture of the Brit. School at Rome. His best known work is the Royal Artillery Memorial Brtt. School at Rome. His best known work is the Royal Artillery Memorial Hyde Park Corner, London, but is not his best work, being a compromise through collaboration with architects and an organising committee. His most characteristic work is in the manuer of the bronze gunners at the sides of this Memorial, the figure on the G.W.R. War Memorial and that of Sir Ernest Shackleton on the building of the Royal Geographical on the building of the Royal Geographical Society. Elected an associate of the Royal Academy, 1926, and a member of the Royal Mint Advisory Committee on Coins, Medal, etc. in 1932. His group in stone for Imperial Chemicals House, Mill-bank, won him, in 1935, the gold medal of the Royal Society of Brit. Sculptors.

Jaggery (Hindustani shakkar), coarse brown sugar of the East Indies, chemically the same as cane-sugar. It is made by inspissation from the sap of various palms, such as the J., coconut, Palmyra, and datepalms (Phanix dactylifera). The Indian palms (Phonix dactylifera). The Indian Phonix sylvestris and Caryota urens also yield J., as do also the Nipa fruircaus, Arenga saccharifera, and others. The sap or juice by fermentation becomes palmwine, from which arrack is distilled.

Jago, Richard (1715-81), Eng. clergy-man and poet, studied at Oxford. He held various livings in Warwickshire from 1746, various livings in Warwickshire from 1748, dying at 'nitterfield. His Poems, Moral and Descriptive were pub. by Hylton in 1754. Among them are: 'The Hackbirds,'; 'Edgehill' or, the Rural Prospect delineated and moralised'; 'Labour and Genius, a Fable.' See W. Shenstone, Works in Verse and Prose, iii., 1777; A. Chalmers, Works of the English Poets, vii., 1810; F. L. Colvile, Worthes of Warwickshire, 1869; and C. H. Poole, ii arwickshire Poets, 1914
Jagst, or Jaxt, dist. and riv. of Württemberg-Haden, Germany. The dist. has an area of 2000 sq m and a pop. of over 400,000. Chief tn., Ellwangen. The riv. is a trib, of the Neckar.
Jaguar (Felis onca), large Amer, spotted cat of the order Felidæ, found in countries

cat of the order Felide, found in countries ranging from Texas through Central and S. America to Patagonia. In form the J



JAGUAR

somewhat resembles the leopard, but is of new and resembles the state of a lion or tiger. Its skull resembles that of a lion or tiger. Its movements are rapid and it is very agile. It has a tawny yellow hide, spotted with block, and varies in length from i ft. to 6 ft. 9 in. It is tes in length from 1 it. to 5 it. 3 in. It is generally found singly, and preys upon quadrupeds, such as horses, dogs, and cuttle. It emits terrific roars and cries, particularly during the mating season. From two to four cubs are produced at birth towards the close of the year. In disposition the J. is ferocious and blood-thirsty and offer having teated human. thirsty, and after having tasted human

flesh, it occasionally becomes a confirmed man-seter. It submits somewhat grudgingly to captivity, but may become subdued and even dodle. It is usually subdued and even dodie. It is usually bunted with dogs and polsoned arrows, though sometimes with the lasso, and the skins are imported into Europe in large numbers. The black-furred J. is some-times regarded as a different species, but the characteristic markings can be detected in cortain lights. Amer. naturalists divide the species into a number of forms regarded as distinct, but preferably ranked as sub-species.

Jahangir, Mogul emperor of India, succeeded his father, Akhbar, in 1605 and reigned till his death in 1627. When he ascended the throne his son, Khusru tried to usurp power and to seize Lahore, whither J. had transferred the seat of gov. Insurrections marked his reign through-out. J. was strongly influenced by his favourite wife, Nur Mahal ('Light of the Harem'), and the currency was struck in her name, and court intrigues occupied her life. J. favoured the Jesuit missionaries, whose influence was ovident in many seventeenth century buildings in Lahore. The Saman Burj and other parts of the old royal palace and various tombs date from J.'s reign. It was in his time that the Eng. first estab. themselves at Surat the Eng. first estab. themselves at Surat and appointed their first embassy to an Indian court. J. was succeeded by his son, Shah Jahan, the founder of Delhi, which city was known to Moslems as Jahanabad. In Jahan's reign the Mogul empire reached the peak of its magnificence. But his chief city of residence was Agra and his name will ever be associated with the glory of Indian architecture, the Taj Mahal, named after his wife, Muntaz Mahal, hesde whom he lies hurden.

Mahál, beside whom he lies buried.

Jahn, Friedrich Ludwig (1778-1852), father of gymnastics, or Turnvater, b. at Lanz in Prussia. First served in the Prussian army, and in 1811 started the first gymnasium in Berlin. His system did graph for neutre purieds the market production and the system as the system as the system and the system as th first gymnasium in Berlin. His system did much to revive patriotism and attracted the Prussian youth, but in 1818 his gymnasia were closed on account of the political gatherings held there, which were of too liberal a nature to find favour in the eyes of the Prussian Gov. J. was arrested and imprisoned for six years

was arrested and imprisoned for six years (1819-25) as a demagogue. He wrote Deutsche Volkstum (1810) and Die deutsche Turnkunst (1816). See E. Nevendorff, Turnouter Jahn, sein Leben und Werk, 1928 and F. Eckhard, Friedrich Ludwig Jahn: Eine Wurtigung seines Lebens und Wirkens (2nd ed.) 1931.

Jahn, Otto (1813-69), Ger. archeologist and classical editor, b. at Kiel. In 1839 he was appointed to the chair of archeology at Leipzig, where he founded the Archeological Society. His pubs. include works on Gk. art, representations of anot. life on vases, a masterly life of Mozart, and essays on music. His letters were ed. by A. Michaelis, 1913.

Jahrum, th. and dist. of Fars prov.

Jahrum, ta. and dist. of Fars prov., Persia, 90 m. from Shiraz. The dist is famous for its shahan dates, other fruits and tobacco being also exported. Pop. 15,000.

Jahvist (J), or Yahwist, worshipper of Jahveh or Yahweh. The term is now generally applied to the writor or writers of the non-Deuteronomic portions of the of the hon-betteround portions of the hexacouch, marked by the use of Jahveh, or Jehovah (the 'sacred tetragrammaton' of JIVH or IHUH), not Elohim, as the name of God. A Jehovist (JE) is properly one who combined the work of Jahvists and Elohists (E).

Jail Fever is now recognised as a severe rm of typhus fever (y,v_*) . The disease Jahl rever is now recognised as a severe form of typhus fover (q, n). The disease raged in Eng. prisons from the sixteenth century breaking out at the Black Assize of Oxford in 1577. It was caught by many attending the assizes at the Old Bailey as late as 1750, but owing to the improvements in sanitation is now of rare excursions. See 1. Howard, Account of occurrence. See J. Howard, Account of the State of Prisons, 1777. Jainism, doctrine of the Jains, a wealthy

and influential Hindu sect, mostly found in the W. dista. of Upper India. It is allied in many respects to Buddhism, but appears to have developed from Brahmanism at an earlier date than Buddhism dld. Its origin is attributed to Vardhamana Mahavira, who lived about the end of the sixth century B.C. The sect flourished sixth century B.C. The sect flourished greatly between the third and eighth centuries, but subsequently dwindled ow-ing to persecution by the Brahmins. In 1901 the number was given as 1,335,000. 1901 the number was given as 1,335,000. The Jains, like the Buddhists, deny the divine origin of the Veda. They believe in the separate existence of the soul after death, even of animals, and this belief leads them to take great care of animal life. They brush seats before sitting, and trink only water that has been strained, never leaving it uncovered for fear that some insect may be drowned in it. They have to practice liberality nietr. greatly have to practise liberality, piety, gentleness, and penance, and must make a daily visit to the Jain temple. Their principle is to suppress the body by abstinence, continence, and silence. During certain seasons they abstain from honey, grapes, fruits, salt, tobacco, and other articles. The members of the religious order of the Jains are called Yatis, those of the secular order Sravakas, the rules for the former being stricter than those for the latter. The Jains are not divided into castes, except in S. India, but they have certain family groups between which marriage is not ollowed. Formerly they advocated leaving the body naked, but this practice is now confined to meal times. Their creed is very detailed, and in many respects fantastic. They reverence defied saints called Jina, who give the sect its name. These saints are eventy-two in number, twenty-four each of the past, present, and future ages respectively, the earlier of them being of gigantic proportions who lived enormous lengths of time, while the most recent resemble ordinary humans in these respects. The J. are responsible for many beautiful temples, notably Mount Abu and Mount Parasnath. Their temples are usually constructed The Jains are not divided into castes, ex-Their temples are usually constructed with pseudo-urch and dome, built in hori-

zontal courses and with pointed section.

Consult E. Thomas, Jainism, or the
Early Faith of Asoka, 1877; T. W. Rhys

Davids, Hibbert Lectures, 1881; Jacobi, Jaina Suiras (vols. i. and il.), 1895; J. Burgess, Buddhist and Jainist Caves (2 vols.), 1881-83; J. Fergusson, Cave (2 vols.), 1881-83; J. Fergusson, Cave of Rawalpindi. It is identified by Temples of India, 1880; J. G. Bühler, On the Indian Sert of the Jains, 1904; H. von Glasenapp, Der Jainismus, 1925; C. J. Shah, Jainism in North India, 800 B.C.—526 A.D., 1932; W. Sohubring, Die Lehre der Jains, 1935; J. Jaini, Outlines of Jainism, 1910.

Jainism, 1910.

Jainism Hills, mountainous dist. form-large of Katoch (fourth century kingdom of Katoch (fourth century)

Jaintia Hills, mountainous dist. forming with Khasi a dist. of Assam, India. It lies S. of Brahmaputra valley, E. of the Khasi Hills. Area about 2000 sq. m. The inhab. call themselves Panars, but are known as Santengs (Syntenga) by the Khasis. Coal and Imostone are found,

and rice is grown.

Jaipur, or Jeypore: (1) State of Raj-putana, India, covering an area of 15,579 tq. m. The central portion is a sandy tableland about 1500 ft. above sca-level, but in the N.W. the surface is broken by a but in the N.W. the surface is broken by a spur of the Arwalli Mts. J. came under Brit. protection in 1818, and 19 one of the wealthiest and bost administered of Indian states. The ruler is the head of the Kachhwaha clan of Rajputs. J acceded to India u. 1947. The minerals found are copier, cobait, and hon, and large quantities of salt abound. Pop. 3,040,000. (2) (ap. of above state, 850 m. N.W. of Calcutta, and 84 m. N.W. of Ajmeer. It is a walled city, well built, with the inaharajah's balace in the centre, and is the chief commorcial centre of Rajputana. Building of note are a orner, and is the chief commortal centre of Rajputana. Buildings of note are a college school of art, industrial and eco-nomic museum, observatory, mint, hos-pital, and sev. mosques and temples. Fabrics, enamelled gold-wares, and marble sculptures are the prin. manuts. Pop. 145,000.

146,000.

Jaisaimir, Jaisaimer, or Jessulmir, one of the Rajunt states of India. Situated in the great Indian desert, in the W. of Rajuntana, it is about 15,000 sq. m. in area. The tin., cap. of the fondatory state, was founded in 1156 by Rawal Jaisai, and is 136 m. from Sukkar. There is a strong fact on the bill with many lain temples. fort on the hill with many Jain temples. Trade in wool, camels, sheep, and cattle is carried on. Pop. of state 70,000; tn.

5000.

Jaice, anct. tn. of Bosnia, on a hill near the junction of the Pliva and Vrbas riva.
The tn. possesses an interesting four-teenth century citadel and a ruined church (fifteenth century), the legendary burial-place of St. Luke. Pop. about 4000.

Jajpur, or Jajpore, th. of Bengal, India, 43 m. from Cuttack. It is a place of pil-grimage. Pop. 11,000 (mostly Hindus). Jakutak, see YAKUTSK. Jalalabad, or Jelalabad, th. of Afghanis-tan, on the route between Kabul and

tan, on the route between Kapul and Peshawar, in a fertile plain near Kabul R., close to Khaibar Pass. It is noted for the brave resistance made by the Brit, under Sale (1841-42) to the Afghans. Its de-destroyed on the Brit. fences were destroyed on the Brit. evacuation of Afghanistan, 1842. Pop.

N.W. of Lahore, noted for shawis. Pop. 12,006. (2) Ruined in. of Jehlam (Jiehum) dist., W. Punjab, Pakistan, 68 m. S.S.E. of Rawalpindi. It is identified by Cunningham with Alexander's Bucephala, built in memory of his famous horse.

Jalandhar, Jullunder, or Jullundur, in. and cantonment of the E. Punjab, India, cap. of Jalandhar dist., 47 m. E.S.E. of Amritaar. It is mentioned in the Mahabharaia, and was once cap. of the Raiput kingdom of Katoch (fourth century B.O.). Pop 75,000 (Moslems).

Jalap, well-known purgative medicine.

Jalap, well-known purgative medicine, consisting of the dried root of *Iromosa purga*, a plant belonging to the Convolus family. It is a native of the E. slopes of the Mexican sierras, growing at an all things of them 1000 # and is arrest altitude of about 6000 ft., and is named from the tn. of Jalapa. Jalap-root confrom the ta. of Jalaps. Jalap-root contains starch, sugar, lignin, etc., but the active principle is a resin present to the extent of 10 per cent., which may be extracted with alcohol. J., which is administered either as a powder or in alcoholic solution. coholic solution, acts as a hydragogue eathurtic, and is used in constipation, reual disease, dropsy, and corebral affec-tions. The ordinary dose of the powder is

tions. The ordinary dose of the powder is from 10 to 30 grains.

Jalapa: (1) Dept. of Guatomala, Central America. Cap. Jalapa. Chief productions are coffee, the sugar-cane, rice, and maize. Pop. 75,100. (2) Tn. in Mexico in the state of Vera Cruz, of which it is the cap., 60 m. by rall N.W. of Vera Cruz city. It is 4330 ft. above sea level and is situated in a picturesque and fertile dist. with a healthy and temperate level and is situated in a picturesque and fertile dist, with a healthy and temperate chinate. The medicinal plant 'jalap' here grows wild. J. is famed for the wide overhanging eaves of its white colonial homes and other buildings, and its redicted roofs showing picturesquely against the semi-tropic verdure. The cathedral is a massive structure, with strange low-placed cupolas and with floors which slope slightly towards the altar. The church of the Beaterio was originally a franciscan convent: its huidings have Franciscan convent; its buildings have been renovated and modernised. Another notable church is that of St. Joseph. The Gov. Building or Palacio de Gobierno, The Gov. Building or Palacio de Gobierno, is a long, white editice of colonial type with pillars and archways on the first floor. Pasco del Ayuntaniento (q.v.) is a fine broad paved street leading to the Parque Juarèz, with its stairways and tall trees. There are other streets called by such names as Street of Jesus Helps You, Street of the Virgin, Street of John the Carbon Burner, Street of the Devil's Pocket, and Street of the Beilringer. Pop. 47,000.

47,000.

Jalaun, tn. of the United Provs., India, 68 nr. W.S.W. of Campore. The surrounding swamps cause cholera and malarial fever. Grain, oil-seeds, and cotton are exported. Pop. 8000 (largely

Hindus).

Jalisco, state of Mexico, on the Pacific, evacuation of Afghanistan, 1842. Pop. about 4000.

Jalabour, or Julaipur: (1) Th. of the W. volcanic cones, Colima (12,736 ft.), and Punjab, Pakistan, Gujarat dist., 78 m. Nevado (14,100 ft.), being the highest.

The chief riv. is the Rio Grande de Santiago, flowing out of Lake Chapala, and draining the N. portion of the state. The chief industries are gold, silver, and copper mining, and agriculture. Cotton and woollen goods, paper and tobacco are manufactured. Guadalajara (q.v.) is the

Cap. Pop. 1,418,300.

Jaina, tn. in the state of Hyderabad, India, about 215 m. from Bombay. J. has ceased to be a cantonment since 1903.

has ceased to be a cantonment since 1903, It is famous for its gardens, which grow large quantities of fruit. Pop. 18,000.

Jalpaiguri, Jalpigori, or Julpigoree, tn. and dist. of India. The tn. 19 on the R. Tista, about 300 m. from Caloutta. Pop. about 10,000. The dist. includes the W. Duars, and is situated S. of Darjeeling and Bhutan, and N. of Cooch Behar. Area 2960 sq. m. The dist. produces jute and tea, and lime is quarried in the lower Bhutan Hills. Pop. nearly 1,000,000.

Jalpan, tn. in Mexico, Queretaro state, situated about 85 m. from Guanajuato. Pop. 2000.

Pop. 2000.

Jaluit, or Jalut, one of the Marshall Is.
in the Pacific. It is the administrative

centre of the group

Jam, name applied to the preserve formed from fruit boiled with an equal tormed from fruit boiled with an equal weight of sugar, which dissolves in the juice of the fruit as the latter is broken. The process of boiling sterilines the entire mixture, and causes the luice to develop the essential 'setting' properties due to the presence of 'pectin bodies' always present in ripe fruits. J., if carefully and well made, can be kept for sev. years, though the quality generally deteriorates after twelve or eighteen months, owing to the crystallisation of the sugar, etc. The time requisite for boiling J. varies accordtime requisite for boiling J. varies according to the nature of the fruit used. It may be anything from ten minutes to one or two hours. The heating process should be two nours. The nearing process should be carried on over a slow fire, in order not to do away with the aromatic and flavouring principles of the fruit. If the boiling is hurried, these are carried away by the steam, and for this reason home-made J is superior to commercial, the latter usually being boiled for a shorter period than the former. When J. is made from oranges or lemons and such fruits, it is termed 'marmalade.' The poel of these contains a large proportion of aromatic and flavouring matter, and towards the end of flavouring matter, and towards the end of the boiling process is added to the pro-serve in the form of shreds. In fruit jellies, the juce of the fruit only is used, not the pulp as well, this being removed by straining. It is then boiled with sugar until ready to 'jelly.' Fruits are 'pre-served' by covering with water in suitable of the pulp and begins to a bigh tenn ntensils and heating to a high temp., the vessels being closed while hot. In home-made preserves, the actual propor-tion of sugar averages about 20 per cent; in commercial, from 10 to 00 per cent. See also PRESERVING.

divided into three cos.: Cornwall in the W.; Surrey in the E., and Middlesex in the centro, each of which is divided into five pars. J. is traversed by a mt. range, running E. and W., which culminates in the Blue Mt. Peak (7423 ft.) in the E. region. From this ridge flow numerous rivs., which promote luxuriant vegetation, but, with the acception of the Black B. but, with the exception of the Black R., are useless for navigation. Black R, is named for Maggotty Falls and is navigable for 25 n. The Salt R., and the Cabaritta, are navigable for a few miles. Other are navigable for a few miles. Other notable rive, are the Rio Cobre and the Rio Minbo in the S., and the Rio Grande, Martha Brae, and Great Sp. R., in the N. Roaring R., with its beautiful falls in St. Ann's Par., and Rio Cobre, which empties into Kingston Harbour, are the most picturesque rivs. There are many ex-cellent harbours—Port Morant, Falmouth, old Harbour, Port Maria, etc., but the finest is Kingston in the S.E. It has a total area of about 16 sq. in., and a depth, over at least 7 sq. m., of from 7-10 fathoms. The harbour is protected by a long spit of sand called the Palisadoes 71 m. long, at the extremity of which is Port Royal. The soil is very rich and fer-tile. The climate of J. is, on the whole, wery healthy. By the coast it is warm (mean temp. 80° all the year), but the heat is lessened by cool breezes. The atmos-(mean temp, 80° all the year), but the heat is lessened by cool breezes. The atmosphere is very moist during the two rainy seasons in May and Oct. Inland and on the uplands the climate is delightfully mild. The is, is frequently visited by thunderstorms. Heavy rains and floods caused much damage in 1909 and 1910. There are many valuable thantations. There are many valuable plantations. The chief trees grown are mahogany, balata, cbony, coconut, palm, liguim-vitæ, logwood, and cacti. There is a flourishing trade in fruit, chiefly oranges. bananas, pineapples, mangoes, and grape-fruit. Very line coffee is cultivated, es-pecially in the dist. of the Bine Wis. Maize, Indian corn. Guinea grass, chinchona, tobacco, and ginger are among the products of the soil.

Industries .- In the old days sugar and rum were supreme, but in the early nineties of last century they were supplanted for the first time as the leading planted for the first time as the teating industries of J. by fruit, which has been steadily growing in importance since that time. The export of bananas has exceeded 25,000,000 bunches in a single year; the production of citrus fruit is also rapidly expanding, as also of cocount. nuts in recent years, however, the banana crops have been much diminished by leaf spot disease (see Banana). 1919 the dept. of agriculture produced a new anety of banana, which may super-sede both the Gros Michel, which is the world accepted banana, and the Lacatan. The strain out of which the new commercial banana is expected is immune from Panama disease and is resistant to leafspot. J. is famous for its rum, which is still re-Jamaica, largest is, in the Brit. W.

Jamaica, largest is, in the Brit. W.

Indies, forming part of the Greater
Antilles. It is situated in the Caribbean
Sea, 90 m. S. of the E. and of Cuba.

It is the chief source for the supply of pimento, or allapice. Other industries include
to be the lest in the world. Coconuts and copra are grown for export. J.

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and dairying. There are about 73,000 ac. under bananas and 40,000 under sugarcane; 40,000 under coco-nuts, and 6000 under coffee (Ann. Report, 1938). Exports: coconuts, logwood, sugar, bananas. coffee, cocoa, ginger, cigars, oranges, and pimento. The prin. manufs. are rum, oils, mineral waters, and matches. There oils, mineral waters, and matches. There are cigar factories, distilleries, and breweries, etc. Trade in 1943 and 1944 aggregated between £11 million and £13 million. Total imports: 1943, £7,311,340: 1944, £8,974.683: 1945, £9,595,587. Total exports: 1948, £1,237,431: 1944, £4,479,630: 1945, £5,137,045. Imports from U.K.: 1943, £2,566,302: 1944, £1,325,783: 1945, £1,326,461: 1946, £2,451,671: 1947, £3,563,248. Exports to U.K.: 1943, £738,688: 1944, £917,455: 1945, £2,530,557. The large supply of cheap black and coloured labour, coupled with the steep fall in the world-price of with the steep fall in the world-price of sugar—which, as to W. Indian sugar, has to compete with beet-sugar—has resulted in lower wages and a reduced standard of living: and there were serious riots in 1938. These, following on riots in Trini-1938. These, following on riots in Trini-dad, led to the sending out of a Royal Commission, under Lord Moyne (later Secretary of State of the Colonies) to investigate W. Indian Colonies generally and to the organisation of a scheme of small holdings or allotments. Much has been accomplished already to improve conditions in J. by grants and loans under the Colonial Development and Welfare Act, 1940. The assistance approved by way of grant and loan to J. to Jan. 31. 1945 reached £3,775,040 (of which total £3,021,440 was by way of grant).

Communications. The is, is intersected by good roads, and there are some 213 m of rallway. The J Gov. rallway (gauge 4 ft. 8½ in.) starts from Kingston, which it connects with Spanish Town (33 m.). Old and to the organisation of a scheme of

Communications. The is, is intersected by good roads, and there are some 213 m of railway. The J Gov. railway (gauge 4 ft. 8½ in.) starts from Kingston, which it connects with Spanish Town (33 m.), Old Harbour, Porus, and Montego Ray. Another line runs from Spanish Town to Hog Walk and Port Antonio. From Bog Walk, Ewarton is reached by another branch line and another line opens up the Rio Minho valley and Upper Clarendon from May Pen. Kingston has a service of electric trans and motor omnibuses. There are telegraph stations and postoffices in every tn. and in many vils.

offices in every tn. and in many vils.

Chief Torms.—The chief tn. is Kingston, the seat of gov. and the largest port and tn. (pop. 109,000); the next in in portance are Spanish Town (12,000). Montego Bay (11,500); and Port Antonio (5,500). Headquarters House, formerly Hibbert's House, where the Legislative Council has net since 1870 (when the seat of gov. was transferred from Spanish Town to Kingston), and the colonial secretary's offices are situated in one of the few buildings of note in Kingston which escaped the carthquake and fire in 1907. A notable institution of Kingston is the Institute of J., rebuilt, after the earth quake, in reinforced brick and concrete. It has a large library, especially rich in Jamalcan and W. Indian liberature. In its Hist, gallery are many notable treasures, including the original 'Shark Papers' exploited by Michael Scott (q.v.)

in his Cruise of the Midge; the bell of the old church of Port Royal; and two silvergilt maces, formerly belonging to the Council and the House of Assembly. The Council and the House of Assembly. The Institute also has a museum containing zoological, geological, botanical, and archæological specimens. King's House, the residence of the governor, is 4 m. from Kingston, in St. Andrew, on the Liguanea Plain. Port Royal, at the extremity of the Palisadoes, is of historic interest, having been the headquarters of the buccaneers, and the mart of their spolls. Prior to the carthquake of June 1692 it was reputed to be the finest tn. in the W. Indies. In Port Royal is Fort Charles, where Nelson commanded in 1779. The staircase to what is known as 'Nelson's Quarter Deck,' a space on the ramparts by the admiral's old quarters, still stands. Port Royal used to be a notable naval station, but the dockyard was closed in 1905, after an existence of 21 centuries. Spanish Town (13 m. from Kingston), the old st. Jago de la Vega or St. James of the Plain of the Sp. days, was formerly an imparted. Plain of the Sp. days, was formerly an important tn. and the well-built group of Gov. Buildings round its central square Gov. Buildings round its central square bears witness to its former grandeur. The most notable of these was the King's House, the former residence of the governors, of which little more than the façade remains. The N. side of the square is ornamented by a stately memorish to Adm. Rodney, victor of the battle of the Saints (q.r.). Near the Square is the Cathedral, dedicated to St. Catherine, whose red brick fabric is in pleasing contrast to the surrounding foliage. It is one trast to the surrounding foliage. It is one of the three oldest eccles, buildings in the W. Indies (the others being the cathedrals at Havana and Cartagena). Bog Walk is a vil. close by a noted gorge of the Rio Corbe. Port Antonio, on the N. side of the is.. 75 m. by train from the cap., is situated on the shore of a spacious harbour. Formerly a vil. of modest size, it rose to a position of prosperity through the banana position of prosperity tarough the bename industry, but suffered when the United Fruit Company moved their headquarters to Kingston. Montego Bay, second the J. is 12 m. by rail from Kingston. When sisted by Columbus it was a large Indian throat of Americal High have been vil. and traces of Arawak life have been found in the neighbouring caves. Its par. church is one of the handsomest in the is. Savanna-la-Mar, the chief tn. of Westmoreland, is the port of a sugar, coffee etc., growing dist. Falmouth (106 m. from Port Antonio) was once a port of some note. Not far from Ewarton are the Roaring River Falls, the largest waterfalls in Jamaica. St. Ann's Par. is a favourite

in Jamaica. St. Ann's Par, is a favourite place of visit on account of the views from Mount Diablo. Mandeville is a favourite resort of winter visitors to J.

Population. The census taken in Jan. 1943 shows a total of 1,237,063 persons resident on the is. (598,267 males and 638,796 females). The estimated pop. in 1945 was 1,289,051, the natural increase being about 18 per thousand. The white pop. numbers about 15,000, the coloured about 200,000, Indian Asiatic, 30,000 and the rest blacks.

Dependencies of Jamaica. Under the

of J. came into force in Nov. 1944. The position of J. was unique, because the colony was returning to a form of responsible, representative gov. after an interval of 78 years, and because the proposals for reform submitted to the spokesmen for reform submitted to the spokesmen for organised public opinion were, to all in tents and purposes, adopted in their en tirety. A bicameral legislature was set up, consisting of a House of Representatives of 32 members elected on a basis of universal adult suffrage (women were enfranchised in 1919 but there was then a prohibitive property qualification) and a nominated Legislative Council of aftern official and publishings. fifteen official and non-official members The old Privy Council of J disappeared from the Constituion, except for questions of perogative, in invoir of an Executive Council of ten, of whom five are elected by the House of Representatives, and by the House of Representatives, and three official and two unofficial members nominated by the governor from the Legislative Council The governor himself is the Chairman with a casting, but not an original, vote. This new body is the prin instrument of policy, with the duty of preparing the budget, and of having to approve Bills, by a majority, before their introduction in either House of the Legislature. It functions, in effect, as a Cabinet, and the five elected members are appointed Ministers in charge of depts of administration They are the leader of the House of Representatives, who as is as chairman of the Finance Committee of that Chamber, and the ministers of communications, agriculture, education, and social weitare, who preside as such over House committees concerned with their depts. The power of certification of measurements which he considered contents that depts The power of certification of measures which he considers essential but which have been rejected by the Legislature, is exercised by the governor in accordance with the advice of the Lxecutive Council and he retains the power of veto, but, before refusing assent, must consult but, before refusing assent, must consult his ministers and, if they do not agree, the secretary of state. The Constitution is to be tried out for a full electoral period of five years, after which the position is to be reviewed. A general election, held in Dec. 1944, returned to the House of Representatives twenty three Labour Members, four representing the People's National Party and five Independents—thase latter closely allied with the J National Party and five tudependents—these latter closely allied with the J Labour Party led by Alexander Bustamente, minuster of communications. Serious labour troubles occurred in 1946 leading to fatal casualties, Bustamente and the minister for social welfare being stated but acquitted on a charge of respectively. tried, but acquitted, on a charge of mansiaughter

Education.—The Imperial (iov., in 1946, decided; after consideration of the Report of the W Indies Commission on Higher Education in the Commission on Higher Education in the Colonies to estab a W. Indian Univ Col lege is J. In the first instance the college will be given the status of a univ. college and will prepare students for the degrees

gov. of J. are Turks and Calcos Is , and | that the college will, after a reasonable Cays Is. (see under their names). | formative period, become a centre of Constitution.—The present Constitution | teuching and research. It was also decided to estab. a permanent medical faculty as an integral part of the college. The univ. received its royal charter in 1949 A beginning has been made to erect permanent buildings for the univ., which, at present, is housed in huts outside kingston.



Liters and Fyffes Ltd BINANA HARVESTING IN JAMAICA

History .- J was discovered on May 3. 1494, by Columbus, who called it Sant Jago but it has retained its Indian name Xavinaxa' or Xavinaca, land of water' There is much cucumstantial evidence about his landing on the above date in the works of Bernildez, Peter Marter, an abbet of Jamaique during the sharter, an about of Januaque during the Spoccupation, and in the trans from the It records by t ilon. Washington Irving's lafe of Columbus tells us that Columbus landed in Puerto Bueno or the bay later called Dry Harbour but he has no authority for his supposition. There is no reliable evidence to ideatify the land-fall of Columbus in J or the port or bay where he careened or repaired his battered the Nefar which had becreakly. caravel, the Nifa, which had borne him southward from Juana or Cubs in quest of Santingo or Kaymaxs or Jamaiqua so it was variously called, or some such is, as he had been truly led to believe tay in that quarter and where he thought to find extravagant treasure in gold and preofess stones. According to Frank Cundail, J.'s modern historian, the distinction of being the place of his landing appears to be about equally divided between St. Ann's Bay and Fort Maria. It was not till mine of Leadon Univ. Eventually, it is hoped years later, on his fourth and last voyage.

that Columbus again visited the is. caught in a violent storm, he ran his ship-aground near St. Ann's Ray, on the N. coast. He came this time not as a Sp. vicoroy but as a shipwrecked refuge, disappointed and broken by the persecution of his enomies. His crews being mutinous and the Arawaks or natives of the is. unwilling to bring him the supplies they had brought on his first visit. Columbus would have starved to death but for playing on the superstitions of the Indians by pre-dicting an eclipse of the moon, a trick which many an explorer has used since in fact and in fletion. When Columbus died (1506) his son Diego inherited his property and went out to Hispaniola (now Haiti and Santo Domingo) as governor. On arriving there he found that J. had been partitioned between two Spaniards, and in order to estab his title, he sent Esquivel to found a settlement in J. under his direction. This settlement was founded on the N. side; but in 1 31, because the vessels salling to and from Spain the tr of St. Jago de la Vega, now Spanish Town. was founded, and this soon became the chief in In 1596 the swas attacked by the Eng, under Scholler, who pillaged Spanish Town, and in 1643 Col Jackson, with some 500 men, landed at Port Royal and exacted a ransom from the Spaniards. J., however, remained in Sp. hands for 161 years, and it was not until May 10, 165; that it changed hands, when Adm. Ponn and Gon. Venables, when Adm Fenn and Gen. Venilles, having been disastions of defected on April 17 and 25 off Hepaniola, gave up the attempt on that is and sailed for J. instoad. Venables reached J on May 10, and the chief the was occupied with next to no fighting and Governor Don Christowal Arnaldo Ysassi was forced to capitulate on May 17. Venables' 'conduct of the campaign' was unskilful to a degree: the campaign was unstituted in degree; while Penn, father of the Quaker founder of Pennsylvania, seems to have done little cise but quarrel with Venables Later, under the auspires of the viceros of Mexico and the governor of Cuba a formidable expedition was fitted out with which Don Ysassi hoped to recover J. But the bravery of the Eng. soldiers dismayed the Sp. commanders at sea and they left the Sp. invading forces in J. to their fate and to the aputhy of the Sp colonists. After this we enter on the constitutional period of Jamaican hist, when civilian governors succeeded military men. The first Eng governor was Col. D'Oyley, who may be regarded as the real conqueror of Jamaica. In 1661 P'Oyley's military command was changed into a civil governorship and his commission from Cromwell instructed him to govern with the advice of an elected council. The African slaves of the Spaniards, who had been brought into the is, after the virtual extermination of the Arawaks, and who were called Marcons, fled to the nit. fastnesses, and they were not finally pacified formed Evre (see and this famous case k. B. until the end of the eighteenth century when, following a rebellion, many of them were deported to Nova Scotia. The year layed a conspicuous part in the transactions he records thirty years later; also

Being the insurrection of the Coromantyns in is ships Ballard's Valley under a leader called the N. Tacky—certainly one of the most danger-ous risings in Jamaican annais. In June 1670 the Brit. occupation of Jamaica was formally recognised by the treaty of Madrid. Colonisation went on and there was a large influx of soldiers and of unwas a large innux or soluters and of midewrable refugees, neither of whom made good settlers. Other settlers came from Nevis and other W. Indian is. J. at this time became one of the hidring places of the buccauseers, freebooters of all nationalities. ilities, who were opposed to the rule of Spain. One of the most famous was Henry Morgan, (qv.) whose exploits are narrated by the Dutch burcaneer, Es-quenceling, who sailed with him (see John Esquemeling, Bucaniers of America, 1684). Morgan eventually became governor of J. as ar Henry Morgan.

J.'s hist, from the late 1790's until 1831 is the story of the anti-slavery struggle to eventual omancipation. Successive colonial sceretaries sought to prevail on the Jamaican legislature to adopt orders in council for the betterment of the condition of the slaves, but the old House of Victor Hugues, the Fr. W. Indian revolu-tionary and friend of Robespierre, came to I and tried to work up insurrection and to I and tried to work up insurrection and bloodshed, and this it was that led to the rebellion of the Trelawney tribe of Myrons in 179. In the critical days of the entry 1830's of J.'s hist, it was fortunate for the is that it had as its governor the entry 1830's and the large Lord Normanby, where it has been benefit a retrieved. who was the most man to hardle a petuthat House of Assembly, which was always disposed to dispute the authority of the Imputal Gov. and even the royal promitter. It was largely through his concilitory hearing and firmness that the Assembly was at length induced to accept the BULL for the ubulifion of always. the Bill for the abolition of slavery. Edward John Eyre, a most experienced colouid administrator, became governor of in 1864. The is, fell upon will times through economic depression and the state of its inances necessitated new taxastate of its manners necessitated new taxa-tion. The resulting discontent led to a rising on Oct. 11, 1465, known as the out-brack at St. Thomas in the East. Mar-tial law was proclamar in the dist. and Groupe Win. Gordon, who was said to have metted the people, was taken from Kingston to Morani Bay, tried summarily, and barged. Gordon was a coloured and harged. Gordon was a coloured number of the Legislative Council and a considerably landowner but he was prone to inflammatory utterances. This may to inflammatory utterances. This may or may not have justified his apprehension; but, by transferring him from Kingston, where martial law had not been declared, to Morant Buy, where it had Eyre committed a technical blunder. Later an enquiry was begun in England by a hostille committee of which John Stuart Mill the committee of which John Stuart Mills as chairman, but a rival committee under Thomas Carlyle and Charles Kingsley defended Eyre (see on this famous case E. B. Underhill, The Tragedy of Morant Bay, 189)—a blased work by a man who played a conspicuous part in the transaccontroversial, but on the other side is Lord Olivier's The Myth of Governor Eyre (1933) and see also the judicially minded work The Sugar Colonies and Governor Eyre (1936), by Wm. Law Mathieson) This reverberating event was followed in 1866 by a drastic change in the gov of J. The one-time recalcitrant Assembly, with its charter and large local rights exercised by a very small class, had become of small influence now that the large sugar planter, who, in 1805, numbered noarly 900 were reduced to 300 in 1865. Strong central gov. under the Crown was the only remedy and so J. was made a crown colon with a gov. and council appointed by the Imperial Government (see further

by the Imperial Government (see further under Government, above).

See E. Long, The History of Jamaica, 3 vols., 1774; Rev. G. W. Bridges, The Annals of Jamaica 2 vols. 1828; W. J. Gardner, A History of Jamaica (new ed.), 1909; F. Cundall, Studies in Jamaica History 1900; H. G. de Lisser, In Jamaica and Cuba: Ludy Nugrai's Journal, privately pub., 1839; (new ed.), ed. by F. Cundall, West Indian Committee, London, 1934; M. G. Lewis (Monk Lewis), Journal of a West Indian Propretor, 1815–1817, ed. by Mona Wilson, 1929; Lord Olivier, by Mona Wilson, 1929; Lord Olivier, Jamana the Blessed Island, 1936; W. J. Brown, Jamaican Journey, 1949

Brown, Janaican Journey, 1949.

Jamaipur: (1) Th. and municipality of
Bengal, India, in the Mymensingh dist.,
38 m. N.W. of Dacca. Pop. 26,000, of
which about two thirds are Moslems
(2) Th. and municipality of Bengal,
India, 32 m W. of Bhagalpur. It contains
the iron workshops belonging to the E
India Railway Company. Pop. 25,000, India Railway Company. P

Jambes, tu. of Belgium and S. suburb of Namur, from which it is separated by the Meuse. It is engaged in agriculture and manufs. of glass, crystal, lamp-black, dynamite and asphalt. Pop. 9600.

Jambi, tn. in Sumatra, on the r. b of the Jambi R., about 25 m. N.W. of Palembang. Many Hinda sculptures have been discovered in its vicinity.

Jamblichus Chaloidenus, ece TAMBLI-

CHUB Jamboree, originally a drinking-hout or merry-making, but now applied by the

Boy Scouts' Association to their national and world rallies. In cuchic (q.v.) it denotes a single hand containing the five highest cards.

highest cards.
Jambu-dups, one of the seven continents of the world, in the Mahabharata, embracing the gods' dwelling place and the mountain of Meru with its 'jambu' or 'rose-apple' troe. Mountains divide it into nine countries, Bharata (India) being the chief. Poetry and Buddhistic works give the name to all India. Others apply it to the mt. dists. only (N.W.), and others to the whole of Asia. others to the whole of Asia.

Jambul, region of the Kazakh S.S.R.

Pop. 62,790. Jambusar, Jambusar, tn. and municipality of India in the Broach dist., Bombay, situated about 28 m. N.W. of Broach.

Pop. 11.000. of three important James, name of three important i. (trans. 1909) and commentaries by figures in the Apostolic Church: (1) The Ewald, Mayor, and writers named in

son of Zebedee and brother of John, one of the most important of the apostles according to the Synoptic accounts. He and his brother received from Jesus the surname 'Boanerges,' explained as meaning 'Sons of thunder.' In Acts 1. 13 ft. he is mentioned among those who, after the Resurrection continued stoadfast in prayer at Jerusalem. He was the first of the apostles to suffer martyrdom, being put to death in the year A.D. 44. by Rerod Agrippa (Acts xii 1 ff.). Legend speaks of his having made missionary Journeys to Spain, of which country he is the patron saint (2) The son of Alphaus, was also an apostle. There has been much discussion as to whether he is to be identified with (4). Mark xv 40 ff. speaks of his mother as a certain Mary, but little is known of him. (3) The 'brother' of Jesus, surnamed the Just, was, according to Epihanius, the son of Joseph by a former marriage. Hegosippus (see Eusebus, Historia Ecclesiasticu, il., 23) gives a detailed description of his accetic life of the kind that would appear ideal to an Rhionite, and Josephus (Ant. xx. 9) also tells us that he suffered death by stoning in A.D 62 under the high-priest Ananus. He was the head of the Jewish Church at Jerusalem and seems to have been the leader of the Judaising party, eager for the observance of the law

Ine conservance of the law

James, Saint, The Epistle of, is placed
first among the Catholic epistles. Its
title is short, James a, servant of God
and of the Lord Jesus Chust, to the twelve
tribes which are scattered abroad.' The traditional view identifies this James with James the Just, Bishop of Jerusalem, and those who hold this view place the date of the epistic very early, before the epistic to the Hebs, and probably before St. Paul's first missionary journey. The epistle is therefore not to be regarded as a pole-inical treatise against the Pauline view of faith, but as an independent address to Jewish Christians from a different point of view. Though the apparent autithesis between the insistence of Paul on justification by faith and the emphasis which James lavs upon works is great, so much so indeed, that Luther characterised the opstic as 'an epistic of straw,' the two views are not contradictory. An almost views are not contradictory. An almost entirely different opinion was held by the Fubingen school, now somewhat dis-credited. They placed the epistle very late Schwegler and Hansrath ascribed it to the time of Trajan, Hilgenfeld to that of Domitian, being supported in thus dating it by Holtzmann and Von Soden. Most of these critics consider the epistle to be the work of a member of the Rom. Church, writing in direct opposition to the Pauline propaganda, for the position of the Tubingen school depends largely on their assumption of an opposition through-out the NT between the Basiline theology. out the N T. between the Pauline theology and that of the older Jewish Christianity. The epistle deals, however, with life not with doctrine. There was some difficulty as to 114 admission into the Canon. Son Zahn's Introduction to the New Testament

article. See also J. Moffatt, Introduction to the Literature of the New Testament, 3rd ed. 1918.

James I. (1394-1437), king of Scotland, James I. (1394-1437), king of Scotland, the son of Robert III., at an early age was sent to France by his father. He was, however, captured by Eng. sailors on his way there, and was imprisoned in England by Henry IV. (1406). In the same year and probably a month later than his capture, his father died and he became nominally king of Scotland. The gov. of Scotland was conducted by the duke of Albany, the king's uncle, who showed no Albany, the king's uncle, who showed no desire to ransom his norther. His education was by no means neglected, and he proved himself one of the best-educated princes of Europe. He was also very active and a good athlete. After accompanying Henry V. to France he was, in 1421, restored to Scotland, the Scots promising a hugo ran out. He had married in the same year, Jane Beaufort, daughter of the duke of Somerset. He was crowned in 1424 and with his real accession begins constitutional monarchy in Scotland. He caused the overthrow of Murdoch, duke of Albany, and his son, and proved so powerful a king that he made many enomies. He crushed the "ulent nobility and was finally murdered by Graham. He was finally nurdered by Graham. He holyrood, he reason several taled in was the author of two poems, The Kingis highest position she had yet attained in Quair and Good Counsel. See A. M. I'm noe, and during his reign the Scottish Quair and Good Counsel. See A. M. Mackenzie The Rise of the Steuart, 1329-1513, 1935; E. Balfour-Molville, James I. (1430-60), the only surviving

James I. He was brought up during his minority under the care of his mother, the earl Douglas acting as regent. and after the second marriage of the queen he passed into the custody of Sir Alexander Livingstone. Aboost continual continual civil war waged during the period of hi-minority, the prize of the victors being the custody of the king. In 1449 J. married and assumed the royal power. He immediately proved himself a strong king. He custed Livingstone to be ex-cented and later stabled Douglas with his comp hands. He consoled the move of the own hands. He crushed the power of the great nobles, and was supported by the majority of them, and also by parliament. the sympathised with the Laucastrian cause in England during the wars of the Roses, and after their defeat he attacked the Eng. possessions in the S. of Scotland. the Eng. possessions in the S. of Scotland. At the sloge of Roxburgh he was kalled by the bursting of a cannon. On the whole the gov. and justice were improved and reformed during his reign. Sec J. Halfour, Annales, 1057-1653, 1825.

James III. (1451-88), the eldest son of James II. He became king at the age of nine, and his minority was speut in the custody of Sir Alexander Boyd. In 1469 he married the durchter of the king of

he married the daughter of the king of Denmark and assumed power himself. The nobles submitted to him, but his deare for peace and for a quiet life soon began to make him unpopular. His brothers plotted against him; both wore arrested and one of them died in prison. The other fied to England and was recog-nised by Edward IV as king of Scotland. War broke out with England, and the lay on his deathbed that a daughter had

duke of Albany and Richard, duke of Gloucester (Richard III.) were, owing to the actions of the barons, able to march upon Edinburgh. Peace was made, but again Albany rebelled and finally died in 1185. The barons, unable to appreciate the peaceful policy of J. towards England, in billed and defeated the king at Samble. to belled and defeated the king at Sauchleburn, where, according to tradition, after the buttle he was slain by a soldier in the disguise of a priest who was called in to shave him. See A. Lang, History of Scot-

land, 1900-07.

James IV. (1475-1513), was the eldest sol of James III., against whom nominally he ought at the battle of Sauchieburn. If was crowned immediately after his nother's death, and at once took over the the magement of the affairs of the realm He had little or no trouble with his publes after the frustration of a plot formed at the beginning of his reign to hand him over to the Lng. king (Henry VII. Tudor), and he was intensely popular with the commons. He supported Perkin War-bed, against Henry VII., but the pro-perted war with England came to rething. and in 1503 the marrane between Mar-gret Tudor and J., which was to result in the union of the crowns, took place at holyrood. He raised Scotland to the court was retined and enlightened. The accession of Henry VIII. led to continual backerings between the two countries, and inally in 1513 J. declared war. He carned some successes at first, but was hadly overthrown at Flodden, He daplitus bravely, and with him perished the flower of Scottish nobility. He was a nam of generous nature, and an energetic kms. See J. Skene, Memorabilia Scotica, 117, 1612, 1923. James V. (1513-42), king of Scotland.

James V. (1513-42), king of Scotland, on oi James IV., succeeded his father at the age of one year, and between the years 1513-28 the country was in a state of constant turnoil, owing it frequent collisions between the Fr. and the Englantes in Scotland. The queer dowager was for a time regent, but finally Albany, at the head of the Fr. party, occupied that position. The king fell but the hands of the Douglases who kept hum prisoner partit the Douglases, who kept him prisoner until the year 1528, when he escaped and began to rule personally. He put down disorder with a firm hand, and proved himself a very capable king, but he was unpopular with the nobles, since he restricted their power too much. He was highly popular with the commons, however, whose rights he preserved. He married in 1538 Mary of Guise. He supported the old form of faith in Scotland, principally because he relied on the clerky for support against the nobles, and refused to follow the lead given by his nucle, Henry VIII. This regiven by his uncle, Henry VIII. This re-fusal to listen to the advice of Henry VIII. led to ill feeling between the two coun-tries, which terminated in 1542 in the out-break of war. The nobles revenged them-selves by deserting their king and leaving him to be overwhelmed at Solway Moss. Shortly afterwards he died, learning as he been born to him—the later Mary Queen of Scots. See E. M. MacKerlie, Mary of

Guise-Lorraine, 1516-1560, 1931.

James I. (1366-1825), king of Great
Britain and Ireland (formerly James VI. or Scotland), the son and only child of Mary Queen of Scots and her second husband, Henry, Lord Darnley. He was born at Edinburgh Castle, and became king in 1567 whon his mother was forced to abdiet. to abdicate. He was a boy of great weakness, and never became a strong man, although he lived for nearly sixty years. He was kept outside politics altogether up to the year 1578. He was brought up first of all under the care of the carl of Mar and his countess, for both of whom he seems to have had much affection. Later, on the death of Mar, Sir Alexander Erskine took him into his charge. His education was by no means neglected. George Bucharan being his principal tutor The times made it necessary that he should be trained as a Protestant, and should be trained as a Protestant, and therefore the cheological side of his cducation was pursued. It was not until 1583 that J. began actually to rule. His reign as James VI of Scotland was altogether for the good of that country. J. broke the power of the baronage and restored the power of the monarchy. He gained the favour of the people, and he was able even to curb the pretensions of the Prestreign Church, and to introduce a form even to cure the preteinsons of the Pres-byterian Church, and to introduce a form of episcopal gov. He had been brought up as a Presbyterian, but he never had any very great love for Presbyterianism. Ho believed above all in the divine right of tings, and held that the chief supporters of this theory—the bishops—were alone to be supported. In England, however, his career was otherwise. He was accepted by his Fig. subjects largely because the alternative to accepting him was civil war. But his pretensions, his in-tolerance, his personal appearance, and his manners did much to alienate his sublects. His claim of divine right, which he supported by pretence to powers of dis-pensation and suspension of the laws, quickly gained for him enemies in Eur-land. The failure of his foreign policy and his desire to pose as the arbiter of Europe were also points against his general popuwere also points against his general properties the falled altogether to see the weakness of Spain, and his desire for a marriage alliance with that country weakened support in England. His reign from 1603 to 1625 may be regarded as one of the essential preliminary causes of the outbreak of civil war in 1612. Truly it has been said 'James sowed the wind, Charles reaped the whirlwind.' He has also been aptly described as the wisest fool in Christendom. He was certainly well educated and well read, but pedantic

1921; C. Williams, James I., 1934; J. D. Mackio, Cavalier and Puritan, 1936.

Mackio, Canalier and Puritan, 1936.

James II. (1633-1701), king of Great
Britain and Ireland, was the second surviving son of Charles I., and was created
duke of York in 1643. During the Civil
war he was captured by Fairfax, but
escaped to Holland in 1648. During the
twelve years which elapsed between this
date and the Restoration, he proved himself an able soldier, and was commended self an able solder, and was commended both by Turenne and Condé. On the res-toration he was appointed Lord High Ad-miral and Warden of the Cinque Ports. He proved himself an able officer and a wise administrator, and gained a great reputation both for ability and courage. His private life was, however, as immoral as that of his brother, the king. He married Anne Hyde in 1660, under exceedingly discreditable circumstances. By her he had issue Mary and Anne, who both ascended the throne. His second wife was Mary I) Este of Modena, who bore



JAMES II.

him a son, James Francis Edward, known as the Pretender, and a daughter, Mary Louisa, who died young. He avowed himself a Rom. Catholic in 1682, but after the passing of the Test Act, he was forced to give up his offices, and later the Popish Plot drove him to Holland. His exclusion from the throne was proposed by the Whigs, but after Charles's triumph ho was Commissioner for Scotland, where he instituted cruel persecutions of the Covenanters, and later he was again made Lord ligh Admirel. He succeeded in Feb. 165, to the throne. He promised to defeat the Church and the laws, and was well educated and well read, but pedantic to a degree. His general reading and his intellectual interests show that he had intellectual interests show that he had received as king with some popularity, great sympathy with the education of the time. Amongst writings of his may be mentioned, Essays of a Prentse in the duced Catholies into the army and the Divine Ario I Poesie (1584); Counterblust in Tobacco (1604). See H. G. Rosedale, ling with and suspending the laws of Spanish Match, 1908; R. S. Rait, James's England. The Declaration of Indulgence Secret, Elizabeth and James VI., 1927; and the refusal of the bishops to read it in H. J. Laski, Political Ideas of James I., libel. They were acquitted amidst the the topographical dept. of the War Office applause of the nation and even of the in 1857, and was knighted in 1860. He is army which J. had gathered at Hounslow famous for having applied photo-zincoto overawe London. The birth of a son to overswe London. The pirth of a sont to him destroyed Eng. hopes of a Protestant succession, and induced a group of Eng. nobles to send an invitation to Wm. of Orange, without which he would not come. J. was sublimely unconscious, in spite of repeated warnings, of what was happening, but awoke to the danger after the arrival of Wm. of Orange in England. He attempted to retreat, and finally fled the country. His first attempt to escape failed, and he was brought back, but allowed to escape again. He crossed to France, and from there to Ireland, where he was defeated at the Boyne (1690). He seems to have lost his old courage, and behaved with great cowardice. Two behaved with great cowardice. Two other attempts to restore him (the battle of La Hogue (q v) and the Assassination Plot) falled, and after refusing the crown of Poland. J. died at St. Germains in France. He was narrow-minded, and against him. To these two causes his failures may be chiefly attributed. See lives by H. Reline 1928; F. M. G. Higham, 1934; i. C. Curner, 1918; also J. Marriott, Crisis of English Laberty, 1930; M. Hay, Wenston Churchill and James 11., 1934.

James, David (1839-93), actor, whose real name was Belacco, b. in London. He made his first appearance at the l'rincess's Theatre under Charles Lean, but subsequently appeared at the Royalty in 1863, where he played in Burnaud's burlesque of Irian, and estab. his reputation in 1870 with his performance of Zekiel Homespun with his performance of Zekiel Homespin in the Herr at Law. His played at various theatres in many parts, but his most successful was Perkyn Middlewick in Our Boys. This piece was played over 1000 times, and was claimed as 'the longest run on record.'

James Francis Edward Stuart, see

STUART, JAMES FRANCIS EDWARD. James, George Payne Rainsford (1799-1860), Eng. novelist, b. in London. Taking to literature early, he attained some success as a writer of miscollaneous articles, and in 1822 produced a Life of articles, and in 1822 produced a Life of the Black Prince, followed within the next thirty years by over a hundred books, mostly novels, the remainder hists., plays, and verse. Many of his tales are historical, Richelieu (1829) being one of the best. They were very popular, having plenty of adventures told in good Eng., though the characters are mere lay-floures. His style is parodied by Thackunougn the characters are mere lay-figures. His style is parodied by Thackeray in 'Barbazure' in Novels by Eminent Hands. Though J.'s histories are compilations of no great value, he was for some time historiographer-royal to Wm. IV. From 1850 to 1860 he was British consul successively in Massachusetts, Virginia, and finally Venice, where he died.

James, Sir Henry (1803-77), directorgeneral of the Orduance Survey of England and Wales, b. in Cornwall. He was
appointed in 1827, and was made directorgeneral in 1851. He was also director of ber. The last was: The Outery, (1911).

in 1857, and was knighted in 1860. He is famous for having applied photo-zinoo-graphy to ordnance maps (1859), on which subject he pub. a book entitled Photo-zincography and other Photographic Pro-cesses employed at the Ordnance Survey Office.

James, Henry, Lord (of Hereford) (1828 1911), Eng. lawyer and statesman, b. at Hereford, and educated at Cheltenham. Called to the Bar in 1852 he became Q.C. year as Liberal member for Taunton, which seat he retained until 1885. In 1873 he was appointed first solicitor. general, atterwards attorney general, and received a knighthood. Resuming office under Mr. Gladstone in 1886, he was offered the lord chancellorship in 1886, but declined to accept it, having broken away from his leader on the Home Rule question. Elected for Bury (Lancs.) in 1886, and re-elected in 1886 and 1892, he became a leading Unionist. At the holding of the Parnell Commission he appeared with Sir Richard Webster as counsel for The Thuse and in 1896 took bis east in The Times, and in 1895 took his seat in the Salisbury cabinet as chancellor of the duchy of Lancaster with a peerage. A on moral free trader, he strongly opposed the Tariff Reform movement in 1903 During the latter years of his life he took great interest in the Imperial Institute file was a good sportsman, and for some time president of the M.C.C.

James, Henry (1843-1916), Amerauthor; b. in New York; son of Henry J., an eminent theological writer and lecturer. He and his brother Wm. (q.v., were in their boyhood educated in England, France, and Switzerland, and after wards at Harvard. Henry was intended for the law, but took to literature instead --encouraged by W. D. Howells, then editor of the Allantic Monthly, in which I's first story appeared in 1865. For four veris he remained in America writing stones in sketches; in 1869 he removed to England. Beginning with the novel if alch and Ward (1871), he pub. a large number of vols.; including novels, collected stories, travel-sketches, criticism, and biography. In spite, or perhaps because, of the peculiar grace and distingland, France, and Switzerland, and after and nography. In spite, or perhaps occurse, of the peculiar grace and distinction of his work he was rather long in arriving —his first great success being the tale of Daisy Miller (1878). He afterwards won universal recognition as being that in the own residentic recognition as first in his own particular school, a school of tar removed from those of older masters of fiction that it has had to create its own circle of admirers. Intensely subtle and analytic in its portraval of character, dealing little in incident; but probing the depths of individuality, of internal strife, of closely-woven intricacles of thrucht and feeling—it has nothing in common with romances like those of Scott and Pumas, or bread vigorous stories of every-day life as told by Dickens. Very chargeThe Foory Tower (1917) and The Sense of the Past (1917) are unfinished. He lived at Rye, Sussex. He was onthusiastically at Rye, Sussex. He was onthusiastically for England on the beginning of the Eirst World War. in July 1915 he became naturalised as a Brit subject. He is ceived O. M. in the very of his death. See the Radonna (1822) The House of Liham (1816), Lives of Edgar, Henry James, Info and Luther, 1927, Van Wyck, Brooks, Pilgrinage of Henry James, 1918, John Stevenson and K. B. Murdock, The Notebook of Henry James and Robert Louis Stevenson. A Record of Friendship and Criticism. James, William (il. 1827), naval his torian, practised in the Lamaics Supreme Court (1801–13). He was detained prisoner in the U.S.A. in 1812, but escaped to Nova Scotia in 1813. He pub various pamphiets on the comparative ments of the Eing and Amer. navics in 1816, but.

co Nova Scotla in 1813 He pub various pamphiets on the comparative ments of the Eng and Amer navies in 1816, but his great work is his Natal History of Great Birdan from the Declaration of War by I rance in 1793 to the Accession of George IV (1820) This appeared in Nota in 1822 24, and was reprinted in 6 vols in 1826

James, William (1812-1910), Amer philosopher, brother of Henry J the novelus (o v), took his degree of M D av Harvard in 1970, and became leet up there in anatomy and physiology in 1 572 Inheriting from his father a love for subtle reasoning and mental research together with great power and freshness in expres sing his theories be became assist ant prof of philosophy (1880), prof (1897) prof of psychology (188) and prof of philosophy (1817–1907) His Fr neiples of Psycho ogy (1890) gave him a wide reputation and was reprinted in a condensed form in 1992, he wrote also The 11 life Helicie (1847), Human Immortality (1893), I all s to Touchers on Psychology and to Students in Life's Ideals (1899) The Varieties of Relaxions & Marches (1899) The Varieties of Relaxions & Marches (1899) The Varieties of the Relaxions & Marches (1899) The Varieties & Marches (1899) The Relaxions & Marches (1899) The Varieties & Marches & Religious Leprinence (1902), Pragmatism (1907), 4 Pluralistic Universe (1908), and The Meaning of Truth (1909) His home was at Cambridge, Mass to husetts, but he visited Europe on sev occasions, and was invited to deliver the Gifford Letures on natural religion at F dinburgh (1899–1901) and the Hibbrt lectures at Manchester (wilege, Oxford (1908) Honorary description of the Manchester (wilege, Oxford description) grees were conferred on him by the univs of Padua, Edinburgh, Princeton, Oxford, Durham, and Geneva

Dunham, and Geneva
James Bay, inter in the part of Hud
son Bay It received its name from its
explorer Catt Thomas James It is
about 300 m long and 150 m wide and
contains a number of islands Moose
Factors, at the mouth of the Moose R. is
an important trading station of the
Hadon's Bay Company
Jameson, Anna Brownell, (1794-1860),
Irish authorees and art critic, b in Dublin
In 1831 she pub her first important work.

In 1831 she pub her first important work,
Memours of Femule Sovereigns, followed
by: Characteristics of Women (1832),
Beauties of the Court of Charles II. (1833),
Wister Studies and Summer Rambles
(1838), the result of her visit to Canada. It (1838), the result of her visit to Canada 11 | in the U.S.A. founded in 1607. Only re-was, however, as an art critic that she ex- mains, however, of this settlement exist

work in 1878 he went out to S Africa, settling at Kimberley, where he was very successful, among his patents being President Kruger and Lobengula. He was in timute with Ceal Rhodes, and when the latter, assisted by J's influence with I obenzula, estab the Brit African company the doctor accompanied the first emigrant column to Mashonaland in New York, we be the appointed and 1530 Yest year, being appointed ad ministrator, he succeeded in checking a Bocter, 4000 strong, organised to dispute the last possession of the country. In 14)) i Matabole invasion brought on a war in which J took a leading part, and ended in the conquest of Matabeleland Returning home for a rost in 1894 he went out again in 189 and on Dec 31 led that dist rous taid into the fransvaal which herdied so many troubles (aptured by the Borra he was sent home for trial and sentenced to lifteen months imprisonment, but was loudly applituded in open court Returning unofficially to Africa be became k aler of the Progressive party after the war and Premier on their success in 1901 His measures were liberal, the of prisoners were liberated and shortly aft awards restored to the franchise, while stichious efforts were made to develop ti it ources of the country, railroads and clustion receiving special attention on thom receiving special attention. In this has party was defected, and J resigned office. He was made P C in 1907, and Bart in 1911. See (of Il Marshall Hol. The Immeson Raid, 1930.

James River, largest riv in Virginia,

1 It 15:18 in the Alleghany Mts,

1 it ms into Chesapeake Bay It has at it is a the August Ares in it is we into Chesapeake Bay It has a length of 150 m, and is navigable for stemboats of 130 tons as far as Richmond (i (1)0 m from its mouth) The chief trit are the Chickshominy and the Appo-

trit are the hickshowing and the Appo-matter I amestown, the first permanent I amestown (1) Cap of St. Helena, situated on the N.W. coast of the is. It is a coaling station, and contains the res i noe of the governor of the is. Pop I, 99 (2) A city in Chautauqua co., New York U.S.A., about 60 m S.W. of Bulfulo, situated on Lake Chautauqua, and is much patronised as a summer resort. It has though potton wills and It has flour, lumber, and cotton mills and paper factorics Pop 42,600 (3) Former settlement in James City co., Virginia, USA, and was the first Eng settlement in the U.S.A. founded in 1607. Only reat the present day, and are incorporated in Williamsburg, the first cap, of Virginia. (4) Tn. in the Lydenburg div., Transvaal, S. Africa, situated N. of Barberton in the Kaap golifields dist. Pop. 3000. Jami, Nureddin Abdurrahman (1414-92),

last great Persian poet, b. at Jam in Khorassan. He wrote lyrical poems and odes, and his collection of romantic poems. Haft Aurung, contains two of his best known, 'Yusuf u Zuleikha' (trans. 1895 by Rogers) and 'Salaman u Absal' (trans. by FitzGerald, 1856). Houlso pub. a hist. of the Suits and other prose works, his chief being Baharustan, which has also been trans.

Jamieson, John (1759-1939), Scottish scholar and antiquery, b. in Glasgow. After studying for the ministry he was ordained to the Anti-Burgher branch of the Secession Church at Fortar in 1731, and afterwards at Edinburgh in 1797. His chief work is The Etymological Dictionary of the Scottish Language (1808). supplement in 1825, and a new ed. m 1879 87. Among his puls, are eds. of Barbour's Bruce, and Blind Harry's Str

William Wallace.

Jamkhandi, can of the native state of Jamkhandi, 'Pho a., India, situated about 37 m. S.W. of Bijapur. Pop.

12,000.

Jammes, Francis (1868-1938), French poet, born at Tournay in the Pyrenees. In his earlier style there were the delicious De l'Angelus de l'aube a l'angelus du soir, Le Denil des primerères and in his later Catholie style Les Georgiques chretiennes. Among his prose stories are Clara d'Elli-house (1899), Almaule d'Étremont (1901), Pomme d'Ans (1901), Le Poete rustique (1920), and Les Robinsons basques (1925).

Jammu, Jamu, or Jummoo, cap, of the state of Jammu and Kashmir, India, and situated about 80 m. N. of Amritear. It was once a seat of a Rajput dynasty, now the residence of the Maharajab of Kashmir

Pop. 32,000.

Jamnagar, see NAWAYAGAR.

Jamnotri, hot springs in Garhwal state. United Provs., Indus, situated near the source of the R. Jumna. Alt. 10,984 ft. Jamrud, fort, N.W. Frontier Prov., Pakistan. It lies 10-12 m. to the W. of

Peshawar at the entrance of the Khyber Pass. It played an important part in 1878-79 in the war with Afghanistan. A new railway line through the Khyber from J. to the frontier of Afghanistan was opened in 1925. Pop. about 6000.

Jamahid, the subject of many Persian poems and legends, is supposed to have belonged to the mythical 'Peeshdadian' Dynasty, and to have built and reigned in Persepolis about 1000-800 B.C., and to have been dethroned by Zobak, the Arabian

Jamtiand, lan or gov. of Sweden; chief tn., Ostersund. Area 20,000 sq. in. Pop. 142,800.

Janaček, Leos (1854-1928), Czoch composer, b. at Hukvaldy, Moravia, son of a vil. schoolmaster. Was a choir-boy at Brne (Brünn) and later choir-master in a monastery. Studied in Prague and Leip- He wrot zig; settled in Brno as conductor and therapy.

composer. Produced a number of operas of strongly national character. His accepted masterpiece is Jenusa ('Her Stepcepted masterpiece is Jenuja (1 Her Step-daughter) (1903), a drama of Moravian peasant life. Katya Kabanova (1921) is an adapted version of Ostrovsky's famous Russian play, The Storm. One of his earliest works was Sarka (1887). His other prim. operas are: the one-Act Regunnia of a Novel (1891): Destina other prin. operas are: the one-Act Beginning of a Novel (1891); Destiny (uver yet performed or printed, 1960); Mr Broucek's Excursions (1914), consist-Ir Broncek's Excursions (1914), consisting of two fantastic dreams within a realistic framework; The Adventures of the Cunning Viren (1923), many of the characters of which are animals or birds, with a hint of underiving symbolism; The Makropoulos Affair (1924) based on a well-known play by Capek; and From the House of the Dead (1928), which adapts for the operatic stage, whisches from for the operatic stage episodes from Dostoevsky's reminiscences of his prisonlife in siberia. He also composed a con-orderable quantity of chamber, orchestral and thoir music and a fine Slavonic folk J. is one of the three or four great opera composers of the twentieth century

and his music has a rich lynical vein not unlike that of Dvořák or Smetana. Jane, Frederick T. (1870–1916). Brit. naval officer and founder and first editor of the anns. Jane's Fighting Ships (from 1-98) an authoritative description of the world's navies; and .111 the World's .ir-craft (from 1910). Educated at Excter crift (from 1910). Educated at Execter school. Naval correspondent for the Engineer, Scientific American, and Standard Other rubs, include: Hlake of the Ruttlesnake' (1895), The Port Guard Ship (1899), The Torpedo in Peace and War (1893), The Jane Naval War Game (1898) and other works on the game, which he invented, Heresics of Sea Poncer (1806), and The British Battle Fleet (1912).

Janeiro, Rio de, see Rio DF Janeiro,
Janesville, cap. of Rock Co., Wiscondn.
I S.A., on the Rock R. about 76 m. S.W.
of Milwaukee. It does a considerable trade in tobacco, and also manufs, cotton

trade in tobacco, and also manufs, cotton and woollen goods. It has much water power, and there are flour, cotton, and woollen mills. Wisconsin State School for the blind is situated here. Pop. 21,000.

Janet, Paul (1823-99), F., philosopher, b. in Paris. He was prof. of philosopher, b. in Paris. He was prof. of philosopher in Strusburg Univ. in 1848, and in 1864 became prof. at the Sorbonne, and a member of the Academy of Moral and Political Sciences, receiving prizes from this institution in 1855 and 1858 for La Famille and Histoire dela Philosophia dans this institution in 1855 and 1858 for La Famille and Histoire de la Philosophie dans l'autiquité et dans les lemps modernes. He also wrote Les Causes finales, which has been translated; Histoire de la philosophie; Philosophie de la Révolution Française; and Théorie de la morale. He was a lucid if not original writer, and in philosophy was a follower of Cousin.

Janet, Plerre Marie Felix (h. 1859), Fr. psychologist, &. in Paris. Appointed prof at the Sorbonne in 1898, and at the Collège de France in 1902. A psychologist

lège de France in 1902. A psychologist and neurologist, he is known especially for his researches on hysteria and neuroses. He wrote on psychology and psyche-

Jang, Bahadur (1816-77), prime minis-ter of Nepal, was a nephow of Mataber Sing, who was a high functionary in Ben-gal. In 1834 he was made commandergal. In 1834 he was made commander-in-chief of the Nepalese army, and in 1846 made himself prime minister when the former holder of the title was murdered He kept on good terms with the Eng. visiting Englandin 1850 and rendered much

Janiculum, hill opposite to the city of one. It was one of the portions beyond Rome. the Tiber included in the fortifications of

Janin, Jules Gabriel (1804-74), Frankle and novelet, b at St. Etienne. He made his reputation by his dramatic criticisms in the Journal des Debuts. His oriticisms in the Journal des Debuts His L'Ane mort et la Femme guillotine (1829), was a clever parody of Victor Hugo This was followed in 1831 by Barnave (his best novel), which gives a striking picture of the first Fr. Revolution. He was elected to the Fr. Academy in 1870.

Janina, Yannina, or Yannina, cap of the prefecture of Janina. Greece, is situated in

prefecture of Janina, Greece, is situated in a picture que position, about 50 m from the shore opposite the is of Corfu It is the seat of a Gk. archbishop, and possesses many mosques and churches. Gold and diver embroidery are still produced in the sity; it was the stronghold of Ali Pasha, the tyrant of Epirus, from 1788-1518; was besieged and captured by the Gks. during the Balkan war, 1913. Pop. aprefecture) 159,000 (tn.) 21,000

Janizaries, renowned force of Turkish soldiery estab. in the fourteenth century Down to about 1600 they were composed of forced levies of Christian vouths, to whom were added young captives taken in war. Trained under a discipline both military and monastic, they were taught to look upon the corps as their only home and for centuries they were the flower of the Ottoman troops Receiving no pay except during the war, they were allowed to work at trades and to act as police They frequently mutined, and at length in 1826 a final revolt at Constantinople resulted in their annihilation

Janjira, coastal state of the Konkan div of Bombay, India, having an area of 324 sq. m The cap. is Murud, and the fort of

aq. in The cap. is Murud, and the fort of Janjira lies on an is, at the entrance of Rajpuri Creek. Pop. about 85,300 Jan Mayen Island, the 'Devil's Island,' lies about 300 m. N. of Icland, in the Arctic Ocean between Greenland and Norway. It is a craggy, volcanic is, whose mossy cliffs are the haunt of millions of seabirds, and whose desolate slopes, when the winter snow recedes, become allow with Arctic plants and an uncome alive with Arctic plants and an unexpected fauna of insects and spiders, and other small animals. Scattered throughother small animals. Scattered throughout the is are the craters of extinct volcances, many of recent origin. At one
precipitous point, on Egy Bluff, steam still
rises from the depths of the is; nearby,
dominating the whole is, the mighty
white Boorenberg rises nearly 8000 ft.,
directly above the surf. From the ice-cap
of this volcanic mt. which is about 30 m.
for this volcanic mt. which is about 30 m.
for the hose and one of the buggest
first appearance as a film actor was in an
volcanic cones in the world, some fifteen

Ernst Lubitsch film (1916) and he also

glaciers drop towards the sea. The is. glaciers drop towards the sea. The iss economically useless; but it is conveniently situated for the estab. of a meteorological station for the recording of Artic storms It was once a vital factory site in the centre of the Arctic whaling grounds. The whales have gone, whaling glounds The whales have gode, but truces of the hunt and the hunters were found in 1947 by the Oxford Univ. expedition on every lonely beach. The earliest hist, of J. M. I is lost even to the Norsemen's legends, but it is agreed that it was discovered long before the whaless it was discovered long before the whalers made it their summer home. A little over three centuries ago mariners from various nations 'discovered' J M. I. One of the first of these was the Dutchman Jan May, who landed on the is. In 1614 and whose name it now hears. It was probably discovered inst by Henry Hudson in 1607, though others, besides Jan May, since his time have claimed to have discovered it. Fr. whalers called it the Isle de Richelieu; in the early days of their whale hunting the Dutch seem to have na ned it St Maurice, while their greatest ishing rivals, the Eng called it Trinity or Sir Thomas Smith's Is. The diaries of early voyagers, however, all diaries of early vovagers, however, all comment on the stark barrenness of J. M., including that of Robert Fotherby, the Eng captain who visited the is in 1615, and reported that in the lowlands 'ail the stones were like unto a smith's sinders both in colour and forme, the sand is generally mixed with a corne like amber. The Oxford expedition have confirmed that this 'amber' is formed of pretty yellow green obvine crystals which shine from the black laval sand of the beaches. The flora of lichens and mosses chings preat times is covered with fulmar, petrols, kittiwakes, little auks, guillemots, and puffins. The Oxford Expedition found the is unmhabited except for the personnel of a meteorological station maintained by the Norwegian Gov In damp place under the cliffs vogetation is lush and varied, comprising such familiar things as dandelions, bilberries, anemones and flowering saxifrages. But at alti-tudes of 7000 ft., and 5000 ft above the mow line may be found mosses and orange

snow line may be found mosses and orange in hims projecting through the snow. (See 'Oxford Goes Exploring,' by A J. Marshall, leader of the Oxford Univ. Expedition, the Times, Nov. 21-25, 1947.)
James and Jambres, legendary names of the two wizerds who 'withstood Moses' (Ex vil 2; 2 Tim ii. 8) According to some traditions they were the 'two youtles' (R.V. 'servants') who accommund Velenon, when he went in the owner. young (it v. servants) who accompanied Balaam when he went up to curse Islaid (Targum I.; Numb. xxii 22). They were the subject of many legends, and a book Pantentia Jannis it Mambre is referred to among the apperephal books by Origin See Schurer, Gesch. iii. 292 et seq

worked for the Amer screen (1925-29) He returned to the stage in 1932 See also CINFMAJOGRAIH, Development of the

Jan of Mabuse, see MABUSF
Jansen, Cornelius (1985–1648), a Dutch
divine, founder of the school of theology known as Jansenism He studied at Louvain and Paris, returning to Louvain as a prof in 1617 He lectured on scripture at the univ for nearly twenty years and was the k ader of the nniv in a bitter controversy with the Jesuits In 1626, he led a deputation to Spain to plead the cause of the univ against the Jesuits, and was successful in getting their author isation to trach the humanities and phil osophy withdrawn by the Court of Ma lind



CORNELLOS JANSEN

Meanwhile he was working on his great theological treatise, the lugustimes designed to restore the teachings of S Augustine to their true place in Christian In 1656 on the recommenda teaching tion of Philip IV he was made bishop of Ypres in 1636 but died som after in an epidemic in 1638 He had never had a conflict with Rome and in his list will and testament declared that he died obedient son to that church in which I have lived to my dying hour ' I wo yours after his death the lugustinus was pub and it immediately appeared that J had favoured the opinions of B ins, an earlier chancellor of Louvain Univ who had taught a doctrine of grace with rescan blances to (divinism. The luguestrans had an immense success, and was defended by the friends of I breaded by Arnauld (q v) For the subsequent hist

Jansenism After the deth of the Dutch divine Jansen in 1638 most of his works and letters were pub, particularly the Augustinus in three vols in 1640 Although Janson had been strongly anti Protestant, some of his tenets resemble ! demned by the Vatican in 1641 Some of Jansen's friedly in the fathers is brilliantly idecided Louis XIV., Jansen's frieds, especially the fathers of at the instigation of the Jesuits, had the Port Royal, headed by Arn unld, defended nunnery demolished. There was further these same propositions, and though in persecution after the issue of the Papal

1653 they were declared heretical, Arnauld would not give way. In 1656 he was de-graded and eviled, and in 1661 his ad-herents were ordered to sign a renunciation of his teaching on pain of imprisonment A truce was estab in 1669, and for thirty A truce was catab in 1669, and for thirty years the Jansenjets, protected by some powerful friends, maintained a precarious footing in I rance in 1703 Louis XIV, under Jesurt instigation, began a fierce attack on J, and in 1713 Clement XII issued the buill Unigenius, condemning the Jesterions of Quesnel, Arnauld's successor This decree had a very mixed reception in France, though the Catholic party proved the stronger The leading Janus mixty withdraw to Holland, where party proved the stronger. The leading Jansennist withdrew to Holland, where the formed a church Jansen had in tended to restore the teaching of Augustine to what he conceived to be its proper like in the church, and to prove how much it has been perverted by the schoolmen. In the first vol. of the Augustinus is defines the distinctive tenets of the second vol. assigns limits to human reason and adjusts the claims of authority with and adjusts the claims of authority with particular reference to the authoritative teaching of Augustine Reversing the time tiple of the schoolmen. J affirmed that philosophy and theology were entirely un connected with each other Original size is not mere imputation of sin, it is a lepiavation of nature and concupiscence is a taint of sin in body and soul. The cacludes with an attempt to identify the actings of the Jesuit Molina with those I the semi Pelagians The fear of God in l of eternal punishment cannot remove cul from the heart fear is a self-tro with of the feeble soul, there is nothing of Good in it, and later in the same con text Japanen attacks the scholastic notion of attrition The fundamental opposition of 1 s teaching to the Catholic Church lay in his disregarding the distinction between the natural and supernatural order. For him all supernatural gifts were not grat noral questions the Jansonists called the least a lexist, while the Jesuits called their opponents 'rigorist' In 1653 Inno int X declared various propositions of u tous but were simply man a due nt Y declared various propositions of Anthony Arnauld r injurious to God r injurious to God Anthony Arnauld 121, joining issue with the pope, argued that though the views as stated by the pope were consumable thoy were not to be fund in Jansen a work. This reply proked a long drawn dispute over papal in fallibility, the nature of which incidentally Jansen had defended in a doctoral thesis in 161. Among the most sudent supporters of I in France were the andent supporters of J in France were the immites of a numery, called Port Royal in the Fields, whose abbess, known later as Warla Angelica de S Magdalona, was the sixter of Arnauld One of the most famous idherents of I was Pascal the author of the inimitable Lettres Promecules, in which the cashistry of certain Jesuit futhers is brilliantly idiculed Louis VIV.,

bull. Uniquates, which condemned the work Moral Observations on the New Iesta ment by the Jansenist. Pasquier Qu snel (q v) But persecution merely had the effect of provoking fanaticum Marvellous cures and other miracles were attributed to Jansenists, and there arose the Couvul sionaries and klagellants. On the death of Louis XIV, indeed, J showed a bold and defiant front. The Sorbonne, which in his reign was Mollinst, became Jansen ist in the regency, and by the middle of the century, J was sensibly felt in the Fr Parliament, and its principles were openly professed by men of high colitical position. The Fr Revolution did mu h to weaken their hold but did not extinguish them altogether, and the influence of their teachings was felt in the Fr Church throughout the nimeteenth century. Io day as a separate Church they exist mainly in Holland whele they are said to number about 6000. See G Gelberon Histoire de Jansensme 1700. Incluming Settly, Herenes Leclesiastical Parties 1874. E Pasquier, Le Jansensme chule doctrinale dapprès les a urces 1309, R Rapin Histoire du Jansensme depuis son origine jusque en 1644, 1801. ind. Aber crombic, The Origins of Jansensme 1936.

rombic, the Origins of January 1946
Janssen, Cornelius (c. 1) 10 10 1) Dutch
painter, b probably at Amsterdam He
came to England in 1818 and was taken
into the service of James I, whose por
trait he painted sev times His chief
pictures are a portrait of Sin George
Villiers, father of the famous duke of
Buckingham, portrait of Charles I (in
Chatsworth House) and Wm Harves
(in the Royal College of Physicians)

(in the Royal College of Physicians)
Janssen, Peter Johann Theodor (1844—
1908), Ger historical and portunit painter,
b at Düsseldorf He was awarded the
gold medal in Berlin in 1893 and in 1895
became director, of the academy at
Düsseldorf His chief work is 'Walther
Dodde and the Peasants of Berg before
the Battle of Warringen 1288'

Janseen, Pierre Jules Cesar (1924-1907), Fr astronomer, b in Paris Ho made a study of mathematics and physics, and in 1857 went to Peru in ord r to determine the magnetic equator In 1875 he was appointed director of the new astrophysical observatory at Mcudon, and interested himself in solar photography his results being pub in Allas de photographysics solaries (1904)

Janssens, Victor Honorius (1664-1739)
Flemish painter, b in Brussols He was
appointed painter to the duke of Holstein,
and later, in 1718, became painter to the
Emperor of Germany in Victoria Some
of his pictures are "St Roch curing the
Diseased", "The Sacrifice of Amass"
Dido ordering the building of Carthago"

Jansens van Nuyssen, Abraham (c 1567-1612), o Flomish painter pupil of Smellinck and rival of Rubons Lie was a good clourist and master of chlaroscuro, his tox chilight see nes being especially fine Ameng his best works are 'Resurrection of Lazarus', 'Descent from the Cross', and 'Ecce Homo' (Shent), 'Entombment' (Antwerp); 'Scaldis', 'Day and Night'

Janthina, see IANTHIVA

Januarius, St., or San Gennaro (d

A D 305) martyr and the patron saint of

Naples Legend relates that he was

bishop of Benevento under Diocletian
and that he suffered martyrdom, accom
panied by most atrocious tortures, during

that emperor a persecutions of the Christ
ans—this body is preserved at Naples
and two phi is which are said to contain
his blood ire shown when the phenomenon
of the lique action of the blood occurs

see tela sanctorum (September), vi 761

891

Jan lary first month of the modern year containing thirty one days. The name is derived from the Rom two faced got links, to whom it was dedicated the Augles and Saxons called the month 'Aultin math, be used cold and hunger induct I the wolves to enter the vils at thit cason. It was formally adopted by all I uropean nations as the first month of the year in the eighteenth centure.

Janus, one of the lidest of the Lat gods. His name is probably derived from the sime root is janua a gate, although some out intrestigal it is the masculine form of Diant (Ian). He was considered the spint of opening and is generally ropresent i with two heads which look both with it wis invoked at the beginning of any enterprise before any other of the gots and he was invoked as the patron of all openings both our rete, as the gates of public or private buildings, and abstract as the beginning of the day, of the month of the year in which caparity the fifth month of the year was dedicated to lifth in the only pricet of his worship was the late variant he king in his capatity as religious heid of the state but overvhead of a brushold was in railly regarded as his fixmen. His worship was probably introduced by Ramulus and Yuma built him an archwire erronously called a temple) which was glavars kept open in times of wir and shut in times of peace beef 5 Special educations.

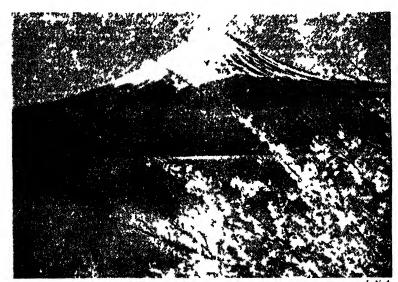
1903 and tefford Lectures, 1110

Joors, native state of Malwa Central
India having in 1rd of 581 ag m. The
to of the same name is situated about
20 n. I of Ratlam. The state is now
part of the Walwa I nion officially known
as Mathya Phanat. The state produces
millet cottom in size and pupples. Pop
(state) 90 000 (tn.) 21,000

Japan, or Nippon (origin of the sun) lens chain of is off the k coast of Asia, divided from the continent by the Jap ser and washed by the Pacific Ocean on its i short, lying between long 156° 31 k and 119° 18 W, and between lat 20 ... and 0 ... \ 1 he former Jap Fmine had a total arch of 263,051 sq m and a pop of 10,226 101 ((crosus of tot 1,1)10) J now consists only of the is which were furnerly known as "Japan Proper" by way of distinguishing between the homeland and the whole Empire in cluding I ormosa, known, leased and man dated ter, all of which have now been lost. The homeland, or "Japan Proper" consists of Honshu (or Mainland) 88,919 sq

m., Hokkaido (Which Defore 1915 Included the Kurile Is. as the prov of Chishima), 34,276 sq. m., Kyushu, 16,247, Shikoku, 5248 and Ryukyu or Luchu Is., 920 sq m., with a total pop of 78,627,000 (estimated) 78,090,363 (at ually registered) at Oct. 1, 1947. After J's defeat in the Second World War she was forced to surrender her other select lands including Man worse was see was forced to surrender her other selzed lands, including Man churia (Manchukuo) with an area of 404,428 sq m and a pop of 41,233,954, the Kuriles, or the 'Myriad Isles' For-mosa, or Talwan, coded to J by China in 1896; the poninyale of Force of Chicago

m., Hokkaido (which before 1912 included | 1925 sq. m., and is studded with beautiful ittle is Four narrow waterways connect it with the Pacific Ocean and the Soa of I, on the W Shimonoseki Strait, on the Hayamoto Strait, and on the N. the Shore of Kuushiu lie three promontories, Nomo, Shimabara, and Kizaki, enclosing a lay on whose shores stand Nagrasaki and a bay on whose shores stand Nagasaki and thuris, (Manchuko) with an area of the (pre-1945) naval port of Saseho On 404,428 sq n) and a pop of 41,234,954, the Kuriles, or the 'Myriad Isles'. Formosa, or Talwan, ceded to J by China in 1895; the peninsula of Korea, or Chosen (pre-1945) naval port of Maizuru.



ILJI YAMA, OF FUJI-BAN

(84,102 sq. m), annexed by J in 1910, the S half of Sakhalin Is, called Karatuto by the Jap (area 1,1,14 at m.) and ceded by Russia in 190), and the Marshall. Carolino, Ladrone (excepting Guam), and Pelew is, former Ger posse sions in the N. Patific, which were placed under Jap provided under Jap the treaty of Variables. nandate under the treaty of Versailles (1919) and were renamed Nauvo, comprising a total area of 830 sq. m. with a pop. (1937) of 121,123. The coastline, which exceeds 17,000 m is long in proper which exceeds 17,000 m is long in proportion to the area, with the exception of Hondo, and is deoply indented, especially on the E shores. There are only two large bays on the E coast, those of Sendar and Matsushima, but there are hundreds of smaller indentations. Further S lie thouse of smaller indentations. Further S lie tables of surings and Ise. The famous in land sea that separates Shikoku from Kiushiu is one of the loveliest sheets of water in the world. It measures about Etchui, six of these rise to 9000 ft.; they

The is are traversed from end to end by ranges of mts, many being volcanic, some few of which are still active. The most famous nut , both for its height (12,397 ft.) and for its singular be say of form and set-ting, is Fuji-yama, or Fuji-san, it lies a suot distance from the great port of 1 okohama in Hondo, the slores are cul-tivated as far up as 1:00 ft, then moor land and forest stretch up to the summit. which is crowned with ashes and scories. The voltano appears to be extinct, having are known as the Jap. Alps. The Nikko | the brilliant sunshine assists in making a Mts. are another range famous for their beautiful vegetation and countless water- even during the summer. The typhoon, beautini vegetation and countries white-falls. The highest peaks of all are Nitz-kayama (14,270 ft.) and Mt. Sylvia, both in Formosa. These are only a few of the multitude of ranges which exist through all the is. The mt. seenery is not rugged, but soft and beautiful; the vegetation of the hill-sides is exceedingly brilliant; the highest peaks do not carry snow all the year round. One famous mt. on the boundary of Hiuga, known as Kirishimayama (5538 ft.), is especially sacred to the Jap, because the god Ninigi descended on its E. peak and introduced the first Jap. emperor, Jimmu. Many of the volcanoes have after long intervals of silence suddenly become active, such as Bandai-san (6037 ft.) which burst into terrible activity in 1888 and destroyed utterly seven prosperous vils. and hundreds of people, or Asamayamo, 90 m. S.W. of Tokyo, which was in eruption in May 1912, and caused widespread damage. The volcanic churacter of the country has given J. one great gift in the shape of numberless hot springs, widely reputed for their medicinal value. Though very mountainous the country has sev. extensive plans; that of Kwanto, which is very fertile, holds the cap., Tokyo, and the tn. of Yokohama. None of the rive, are of any considerable size, though probably no country is so well watered by network of streams and lakes. The longest riv. is the Tshikarigawa (275 m.), and one of the most important is the Tone gawa (177 m. long), its mouth being shimosa. The Shinano (216 m.) waters the plain of Echigo, flows into the sea of J., and is navigable for about 90 m. Most of the rive. are short, rapid, and shallow, caining depth when the snows are melting; they are freely used for electric purposes and whenever possible for transport. The lakes of J. are numerous. They are very beautiful, the largest being Biwa in the centre of Honshin, about 180 m. in cir. centre or Honshin, about 180 m. in circumference; it possesses eight views of wonderful beauty and is much loved by the Jap. Lake Suwa in Shinano is also celebrated for its beauty. The cight lakes at the foot of the slopes of Fuji-yama are

popular resorts for both foreigners and Jap,
The geological basis of the is, consists
of granite, syenite, and diorite, granite
everywhere predominating; the granite
is not siways pure, e.g. in the valleys of
Nikko a granite-porphyry is found with orystals, felspar, and quartz, etc. The soil is usually workable and prolific, and along the banks of the rive fertile and well adapted for the cultivation of rice. climate necessarily varies in different parts of the empire owing to the long extension of the is. Its general characteristics are best and moisture through the short, bright summer, followed by long, cold. fine winters. There are three wet seasons, the first from the middle of April to the begin-ning of May, the second from the middle of June to the beginning of July, and the third from Sept. to early in Oct. In the more mountainous dists, of the is, the snowfall during the winter is very deep. lotus his during the summer months J. is, rather a wet country, and although covers the lakes and rive. with its delicate

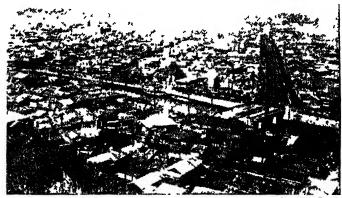
the brilliant sunsine assure in making a healthy climate, bad fogs are prevalent even during the summer. The typhoon, or great wind, is a terrible visitor, especially during Sept., though few months exape one exhibition of its force. The equivalent of nearly \$2,000,000 sterling has been expended in one year for damages caused by the typhoon, including the destruction of shore vite. Tooks, combanks are the statement of the state destruction of ships, vils., roads, embank-ments, and bridges, etc. The is. also suffer from frequent earthquakes, accompanied by tidal waves which claim thousands of human victims. In 1923 a terrible earthquake occurred in which nearly 150,000 people were killed in Tokyo and Yokohama, and the damage done was estimated to cost about five billion yen. This was followed on May 21, 1925, by an carthquake at Kiebe in which numbers of people were killed, and shocks were also experienced in 1929 (see under Exerti-gurkir). An earthquake which, accom-panied by a 7 ft tidal wave, struck central I and the is. of Shikoku on Dec. 21, 1946, was almost as severe as the earthquake of 1923, but the casualties were only 680 dead, and 4819 houses were destroyed.

Flora.—J. has a great and beautiful variety of vegetation, the colours of the foliage in spring and autumn being unsurpassed in richness and range of shades. Many Eng gardens have gained in beauty by the brilliantly coloured shrubs brought tron J. Oaks, laurel, confers, walnuts, buch, chestnut, an phor trees, and especially the weeping willow and maple grow neely, while everywhere the bamboo is seen growing in beautiful is seen growing in beautiful clumps. Among the quoons of the flowering trees the plum must come first, so graceful in its growth and if its profusion of beautiful blossom and so wonderful in its richly coloured foliage. The cherry tree is even more beloved by the natives, who stand among the world's greatest and most artistic gardeners. The peach tree also the peach tree analysis profusion, but all these three, the plum, the cherry, and the peach, bear only blossoms and no fruit worth mentioning. The Jap. pyrus, or pear tree, and the malus, or apple tree, have become familiar to Eng. gardeners, and are much prized for their gay colouring and cloud of blossoms; among the apple varieties the Florizanda is especially hardy and beautiful. The magnoin blooms in great perfection, also the azalea, chrysanthemum, peonles, iris, hydrangea, camella, gum cistus, etc. We owe many of our most graceful and brightly coloured shrubs and flowers to Jan gardeners. As a race they love the art of gardening, and at no time is the country devoid of blossoms of some kind. Their landscape and water-gardens are creations of brauty, and the miniature, or toy gardens, are an astonishing example of patient care and study. In fascinating little places a perfect tree such as a cedar may be a hundred years old vet dwarfed to attain only a few in. in height, though perfectly complete in its proportions. Lilles grow wild in great variety, and the lotus by during the summer months

Ferns are found everywhere in great quantities; there are over 150 different species. The chief fruits are the ont species The chief fruits are the orange, knape, pear, apple, lequat, peach, raspberry, and persimmen; they are, however, often rather tasteless and inclined to be tough. Vegetables are well cultivated, and many curious and palatable roots have been introduced from J. to Europe during recent years.

Fauna.—There are sev. kinds of wild animals. The black bear is found in Hondo and the brown bear in Yezo, the loe bear is an occasional visitor, carried

are a very few turtles (highly valued when are a very tew tirtles (nighly valued when caught), many tortoises, ten varieties of suakes, only one being venomous; lizards, frogs, toads, and newts are plentiful, and the giant salamander, which has been said to attain a length of 5 ft. Fish forms a very large part of the food of the Jap; it is wonderfully plentiful both in the sea and the tivs and lake. Among the chief are is wonderfully picturul both in the sea and the rivs and lakes. Among the chief are the bleam, perch, mullet, mackerel, haddock, and salmon. The gold carp and the gold-fish, so pilzed for their beautiful insect life, the golden and the jewel beetle, and the many kinds of brilliant butterflies of troules healty, there are seven kinds. loe bear is an occasional visitor, carried insect life, the golden and the jewel beetle, down by the Arctic current. Badgers and and the many kinds of brilliant butterflies foxes are numerous and are credited with of tropical beauty, there are seven kinds



Canadian Pacific

TOKOHAVIA

supernatural powers; monkeys abound all over the is, there are no rabbits, but bares are plentiful. Wild boars and stags, also autolopes, exist in the mountainous dists., otters and sea otters are numerous and much valued for their fur The squirrel and the rat are very common, but there are no mice The bird life carries a there are no inice in the outline carries a water cross and invitates of sarrimps whose large variety, water fowl is very plentiful, wild get so, ducks, teal, and herous, especially the silver heron (belowed by Jap artists), are seen in large numbers, also the kite, falcon, and spiritow hawk. Among the game birds the commonest are the ptermigan, unipe, plover, quail, wood cock, and pheasant; there are two varieties of the latter, one known as the copper pheasant, heing remarkable for its beautiful plumage. Eagles have here found but recently in small quantities. The crane is a sar are bird, heing honourd as an emblem of longevity. Among the smaller but the tyursu comes first, a species of nightingale gifted with a very beautiful song. The cukeoo, lark hoopee, blue-bird, starling, wren, kingfisher, and various linches, etc., are all inhabs, of the is. Among the thirty species of reptiles. blarge variety, water fowl is very plentiful, wild get so, ducks, teal, and herons, especially the silver heron (beloved by Jap

of silk moths and from the ecocon of the moth (alyula Japonica, fishing lines are menufactured. The singing cricket and the cleads are common everywhere, also beautiful dragon files. Spiders abound and attain gigantic proportions. In the makes and rivs, live many kinds of fresh water crabs and myriads of shrimps which are largely used for food.

and centres of foreign trade. The present pop of I consists of two distinct in es the Afnus (or Ainos), and the Jap The Afnus are probably the original race of the n am is, Hondo Evidence of another primitive people has been found so call dipit dwellers who dug pits in the earth and roofed them over to live in The Important from the Korean and Chinese The main part of the race is short or stature and very musular but many types are distinguishable, the most important being an element of the Valav then follow the Manchu Kor in type the Monkol and lastiv the Airu in the Stature and representation of the received the Monkol and lastiv the Airu in the Stature and representation of the received the Monkol and lastiv the Airu in the Stature and representation of the received the Monkol and lastiv the Airu in the Stature and representation of the received the Monkol and lastiv the Airu in the Stature and representation of the Monkol and lastiv the Airu in the Stature and representations and the Monkol and Lastiv the Airu in the Stature and representations and the Monkol and Lastiv the Airu in the Stature and representations and the Monkol and Lastiv the Airu in the Stature and representations and the Monkol and Lastiv the Airu in the Stature and representations and the Monkol and Lastiv the Airu in the Stature and representations and the Monkol and Lastiv the Airu in the Stature and representations and the Monkol and the Monk Ainus (or Ainos), and the Jap | the Ainus Moncol and lastly the Alt u. In the schope people are more refined in appearance and the women faccording to W. ideas) are frequently beautiful while turther S. the tendency to prominent checkbones and flat noses becomes more obvious. I how are straight haired and usually very dark. As a race they are an exceedingly happy light hearted people. Children occupy an important place in every family. I has been called rightly the paradise of children. The present condition of comment is based upon the principle of equality of sexes As a wife and mother the Jap woman enjoys a position of free equality of sexes As a wik and mother the lap woman enjoys a position of free dom and respect. If single she may and often does, adopt children and becomes 'house head' of her legal family. The general character of the lap woman is especially worthy of mention they are unselfish, modest, kind hearted and patient, obedient as daughters faithful as wives, and devoted as mothers. Both men and women are by nature frugal and industrious and share in a na nonate love. industrious and share in a 1 a 10nate love of then country

Religion — There is the dute religious treedom in J. The original religion of J is Shinto (the divine way) a mixture of nature worship and ancestor worship It regards human people as naturally vir tuous being descended from the gods and regards numen people as naturally virtuous being descended from the gods and assumes that an individual sconecime is his true guide. The dead are ghosts in habiting a world of darkness with the power of bringing sorrow or joy into the living. There are more ungerous gods and goddesses with sy be nutful and charming legends attact to them. The prin divinity is Amateram the god dess of the sun. Her shute at less is visited by crowds of pilgrims. There appears to be no definite idea of what kind of life continues after death, but the cult expects natural purity of his without promises of reward. Buddhi in reached J. (552 A.D.) through Kores and the two religions became so interinical it was difficult to disentangle them. Buddhium however, gradually absorbed the greater part of Shinto, though divided into various sects. In 1940 there were 3081 Christian preschers in J., and 2104 Christian churchs belonging to various demoninations. The Rom. (atholic Church was recognised in vasited by crowds of pilgrins. There appears to be no definite idea of what kind of life continues after death, I in the cult expects natural purity of his without promises of reward. Buddhi in reached J. (552 A D) through Kora and the two religious became so interinized it was difficult to disentangle them. Buddhism however, gradually absorbed the grater part of Shinto, though divided into various sects. In 1940 there were 3081 Christian preschers in J, and 2104 Christian churchs belonging to various denominations. The Rom (atholic Church was recognised in particularly fortlie, and hard work and

(Kyushu) 173,650, Otaru (Hokkaido) 154 000, Nikata (Honshu) 135,000 | Moji Shimonoseki (Honshu) 135 000 | Moji Kyushu) 122,000, there are sixteen other thas with a pop of over 100 000 | Yokohama and Kobé are the chief ports | Industries — The industrial progress of

Industries—the industrial progress of the country made rapid strides up to the outlier of war (144) Libour is all with the spind plentiful Machinery had be n largely introduced. The prin manufa are slik and cotton waves chemicals cotton yarn lacquered ware, chemicals and feithers matches carthonware strawi luts, matting, plass cement brushes woollen fabrics fe itherware tattictware prusing wooling tabrics kintred goods porcelain rubber goods son vesetabl oil tools lamb to ware and complete in leampt oil. The name of more oil to the success of enormously before the last world ware sugar 16 in was a prowing industry before as mitting facen i and porcelain re main unchanged. The country produces county out in its own use reaching 37 °C 000 metal tong in 1935. The produ ti n of fron is mautheient and was sup plemented from China and korea before the war Geld is found and has been the war Gold is found and nas a work i but not in great quantities work i but not in great quantities in 1936 the output was 22 198 000 grammes Copper occurs in larger quantities and is a furly valuable asset the output in 1336 was 7° 973 000 kilogrammes. The zinc output in 1336 was 39 066 000 kilogrammes. The zinc output in 1336 was 39 066 000 kilogrammes. The zinc output in 1336 was 39 066 000 kilogrammes. In course, and see 1751 000 metric tous lead \$ 585 000 kilogrammes. Picton 313 000 metric tous and see 291 000 metric tous seventy per cent of the while area is covered with forest. File forest area in 193 was 1 > 1000 acs. of which 19 000 100 was belonged to the Stiff in deeme 3000 000 ac to the lin penial Household. From these forests a quirity of good timber is obtained for buil ling orn incital work and to is of the tout the output. of the forets ontain also (typto merit prome / kowa keski Pinus mass nima and Lawlownia imperialis which is used for fine; boxes, etc. Another smaller industry furnished by the forests is the critication of mushrooms, these are iri d and exported to China and India (amphor is another valuable gift from the forests though the industry is now chiefly in I cames where large camphor forests are find. The fishing industry is of very great importance. The value of it to the ting innuity patually varies but rough it has rached 327 292 000 year for raw 1 inne produce and 181 204 000 year for 1 inufactured. The industry of salt

what they are. Rice is, of course, the chief crop; it forms the prin. food of the people, and is also the basis of the national drink, saki. It is a summer crop, harvested in Sept.; the fields are itooded while the grain is young and then drained. The following are the chief products, the area under cultivation, and the production in metric tons, for 1938: rice, 3,248,000 hectares (9,633,000 notric tons); wheat, 731,000 hectares (1,388,000 metric tons); barley, 361,000 hectares (778,000 metric tons); barley, 361,000 hectures (778,000 metric tons); rye, 418,000 hoctares (738,000 metric tons); tohacco, 35,200 hoctares (64,000 metric tons); and tea, 40,500 hectares (55,000 metric tons). Other im-portant crops are millet, small red beans, buckwheat, rape seed, potato, sweet potatoes, indigo, hemp, sugar-cane, and poppermint, etc. The naper mulberry is extensively grown, its fibrous tissue belief peppermint, etc. The naper mulberry is extensively grown, its fibrous tissue being the chief material used for Jap. paper. Barley is grown with particular care as it provides the material for straw-plaits, which is an important manuf. Stockbreeding is not extensive, pastureland being scarce. The growing liking for beef among the people before 1941 diminished the indigenous cai', but various foreign breeds were imported. Sheep and pigs were on the increase but the natives prefer host. Oasts are kent for their milk. The beet. Coats are kept for their milk. The rearing of silk-worms as a very important rearing of silk-worms is a very important asset to the small farmer. Jap. silk had long been famous. The chief silk-producing prefectures are Nagano, Gumma, Yananashi, Fukushma, Aichi, and Saitama; thousands of families are engaged in its production and manuf. In 1940 the total number of cocoons obtained was 43.888 400 keeps, a board at 500 400 form. 43,868,000 kwan, valued at 500,499,000 yen. The total raw sik produced in 1937 was 41,875 metric tons. The production was 41,875 metric tons. The production of rayon in 1938 was 199,876,000 lbs. and exports of rayon varu in 1938 were 21,984,000 lbs. valued at 17.845,000 yen. Radways and communications.— Rail-

ways made rapid strides before the Second World War. There sie now 15,254 m. of world war. There are now 15,254 in. or railroad, chiefly owned by the State. The first line ran between Yokohama and Tokyo, opened in 1872. After the war with Russia in 1901 the state nationalised the railways, and the growth and perfec-tion of the system was still in evolution up to the war. It was decided, before the war, to make the standard gauge 4 ft. 81 in. The work was expected to be com-84 in. The work was expected to be com-pleted in 1943, at a cost of 1408 million yen. Comprehensive plans were also made for the electrification of the state railways. The postal service is modelled on W. lines, and J. became a member of the inter-national postal union in 1877. In 1938, 4,763,778,000 letters, postcards and newspapers and periodicels were sent and 80,529,000 parcels. There were 14,331 telegraph and post offices in 1938. Telegraphic communication commenced in 1867; much trouble occurred with the more ignorant section of the public who persisted in believing it was an evil thing. power with the consent of the Imperial In 1884 J. joined the telegraphic union. Diet, which consisted of two Houses, and in 1938, 78,992,000 telegrams were liouse of Peers and House of Representation. The telephone was adopted in tives. The House of Peers consisted of

hard living have made the rich rice fields | 1877, a year after it was invented. Before 1877, a year after it was invented. Before the war there were 981,936 subscribers and 83.641 line m. Roads in J. are divided into three classes: state roads, prefertural roads, and vil. roads. They are generally well kept, and the gov. gave an ann. grant for assisting their upkeep and improvement. The first electric tramway was constructed in Kyoto in 1895. Before the war there were sev electric really war. the war there were sev. electric railways and tramways running in the larger cities. Urainage improved rapidly, the usual W. methods of street scavenging being emploved in all the tas, and cities. Crema-tion is encouraged with much success, and crematoria have been estab. in Tokyo and Otaka: other like places have been arranged all over the empire.

Fire Year Plan for Japan.—Evidence of J.'s determination to restore her shattored economy was afforded by a five-year Lared economy was afforded by a five-year plan for national reliabilitation pub. in Sept. 1945 by the National Land Bureau of the ministry of the interior. The plan envisages the redistribution within J.'s reduced ter of a pop. estimated to reach 80.000,000 by 1950, the greater production of foodstuffs, the reorganisation and redis-tribution of industries the reduction in the of foodstuffs, the reorganisation and redistribution of industries, the reduction in the number of unemployed and the restoration of devastated cities. Of the estimated working pop. of 38,000,000, some 164 million are to be engaged in agriculture and torestry, 600,000 in ishery, 6,300,000 in industry (making a reduction of 3,000,000 compared with the war years), 7,100,000 on building and road-making, and 5,000,000 in commerce. This leaves 24 million nor moloyed but they are exand 5,000,000 in ommerce. This leaves 24 million unemployed, but they are expected to be absorbed as reconstruction progresses. J.'s urb. pop. is not to exceed 30 000,000. The remaining 50,000,000 are to be restricted to the farming, fishing, and mining vils. To support this pop. 57,000,000 koku of rice will be required on the base of an ann consumption of 57,000,000 koku of rice will be required on the basis of an ann. consumption of 1 02 koku per capita (one koku equals about 5 bushels). J.'s cultivated area, which in 1911 was about 6,000,000 chobu one chobu equals 21 ars.), is to be increased to 7,500,000 chobu by 1950. The and then under cultivation should produce 70,000,000 koku of rice, leaving 17,000,000 to be imported. No permant undertied also could be made area. nent industrial plan could be made pend-ing the decision of the Allies on reparations and on the amount of industrial produc-

and on the amount of industrial produc-tion to be permitted. Constitution and government.—From the accession of the Emperor Jimmu in 660 B.C. until 1889, the country was ruled by an absolute monarchy, but in 1889 the emperor, after much study of the gov. of other countries, gave J. its pre-1945 (or Meyi') constitution. The emperor, called by foreigness the 'Mikado,' and by his subjects 'Tenshi,' then possessed the nights of sovereignty and had exceptive power. He was assisted by Cabinet minis-He was assisted by Cabinet minisiers chosen by himself. He was also advised on important state matters by a privy council, and exercised legislative power with the consent of the Imperial Diet, which consisted of two Houses,

(1) male members of the Imperial family of full age. (2) princes and marquises over 30 years of age. (3) counts, viscounts and barons over 30 years of age nominated by the emperor for meritorious services and erudition, (5) members of the Imperial Academy of Sciences and (6) representatives of the highest taxpayors nominated by their own class. General manhood suffrage came into force in 1925, under which, in principle, all male subjects over 25 years of age are electors, and those over 30 years are eligible for election. By a subsequent law, the number of the House of Representatives was fixed at 466. The 'Meiji Constitution' was super-soded in 1946 by a new draft (onstitution much more in harmony with the concepts of W. democracy. (See below under History.—Japan's new epoch.) Women suffrage had not come into heing in J. before the war, but women were taking an increasing interest in social work and politics. Voting is by secret ballot. For local gov., J is divided into municipalities. Modern jurisdiotion has been introduced. There were (1941) 51 prisons and 104 detached prisons. The courts of justice are classed as: dist. courts, local courts, courts of appeal, and the court of cassation or supreme court.

supreme court.

Commerce.—Immediately before the Second World War J's shipping industry was well on the increase. Her exports grew in bulk annually, having increased fourfold in the last few years preceding 1941. The chief were slik, cotton, grain, and seeds, tea, and marine products, etc. The United States and China took the bulk of these, followed by Britain, while India bought two-thirds of the raw cotton. The export programme for 1946 permitted by the Supreme Allied Commander was to the value of 200,000,000 dollars, or about 25 per cent of the value of exports in the years 1934 1939. The chief imports were raw cotton from India U.S.A., Egypt, and China, wheat from Canada. Australia, and U.S.A., wool from Australia; rubber from Brit Maiaya; orleake from Kwantung Prov. and China; immber from U.S.A., and piece goods, woollens, drugs, notals, rails, machinery fertilisers, locomotives, etc from the U.S.A. and Europe. Sugar is mainly imported from the Dutch & Indies, Formosa and the Philippines; kerosene from America and the Dutch & Indies, Formosa and rice from India, Fr. Indo-China, Korea and rice from India, Fr. Indo-China, Korea and the Buste from China and Korea and rice from India, Fr. Indo-China, Korea ends, cotton fabrics, cotton yarns, tea, knitted goods, camphor, straw plaits, refined sugar, coal, porceluin, matches, earthenware, paper, glass and toys. The number of galling ships engaged in trade before the war was 15,886 and the number of mercantile steamers was about 3600 Yokoham is the prin. commercial port, Kobe comes next in importance, then Osaka and Moji. among other ports are Shimonoseki, Tsuruga, Otaru, and Nagasaki (the lest-named largely destroyed in the war).

Education.—Elementary education is free and compulsory for children from six to fourteen years of age. There were before the Second World War 25,840 elementary schools and a considerable number of high schools, army and navy schools, and departmental schools, which included the study of communications, marino industry, agriculture, and commerce. There are over 12,000,000 children in the elementary schools. High schools are also State-aided, and prepare for a three years' course at the Univs. There are high schools for girls, whose education is nearly as well looked after as that of the boys. There are also logal



A STRAKT IN KYOTO

schools and private schools of general institution, and higher schools and certain colleges for girls, both technical and industrial. There are kindergarten schools for the little children of three years of age, but these are not compulsory or part of the national system. There are six State Ums - Tokyo (2), Kyoto, Yohoku (at Sendal), Hokkaido and Klushiu (at Fukuoka), beides five medical univs.

inny.—From the twelfth century till the great revolution of the middle of the macteenth century the fighting power was restricted to a hereditary military caste, the samurai or bush, whose hist, rise, and fall, is sketched in the section History below. Their weapons were the bow, the single-edged curved sword, and spear. The armour was of a special type which lasted unchanged till 1871. A combination of metal plates and scales sewn on leather, often highly decorated with elaborate embroidery, damascening, etc., if thing like a lones expeen over the body of the wearer rendering him in appearance bulky and unwieldy. The samurai served as foudal retainers of the great families. Finally the great Taria and Minamoto families predominated, and on the fall of the former the Minamotoe became the chief military power. The abolition of the samurai, the introduction of firearms.

following on the disasters of foreign interference, brought about a remodelling of with citizen (heimiu, commoner) army on W. lines. Furtively attacked in 1862, the problem was solved in various stages, with military schools, with three years' service with the colours, and four in the reserve, and organisation in military dists. By 1876 the army on a war footing reached nearly 50 000 and in 1877 engesytelly. nearly 50,000, and in 1877 successfully met the Satsuma rebellion and defeated the old samural. The evolution of the army progressed rapidly, and the Sino-Jap. War tested the capacities of the new force; in the Jap. expedition to Pekin in 1900 yelucible legency are in termed. The 1900 valuable lessons were learned. The Russian war saw 800,000 troops in the field. Improvements followed, and by the Imperial ordinance of 1909 the military forces were to consist of the Active Army, liable to serve abroad, and the National Army, both in the reverses There were militia forces in some of the is. Service was compulsory from seventeen Service was compulsory from seventeen to forty, but embediment was deferred till twenty. Two years' service in the active army, 'geni-ki,' was compulsory for the absolutely lit, five years four months in the reserve, 'yobi,' ton years in the second 'in and two years eight months in the home defence, 'kokumin.' The normal strength of the second World War active army before the Second World War. *kokumin.* The normal surengm of the active army before he Second World War was 15,000 officers and 242,000 other ranks. The air personnel for the army numbered in 1938, 10,200 organised in 21 pursuit squadrons, 12 reconnaissance and a squadrons, 12 reconnaissance and a squadrons are squadrons and a squadrons are squadrons and a squadrons and a squadrons and a squadrons and a squadrons are squadrons and a squad numbered in 1938, 10,200 organised in 21 pursuit squadrons, 12 reconnaissance squadrons, 12 bombing squadrons and a balloon corps. The number of aeroplanes in service was 1500. For the war with China 7 classes of reserves were called up in 1938, giving the army a strength of \$350,000 after making up losses. During the 1929 campaign more than 16 divs. (over 300,000 men) were engaged in Schina. The Jap. is, were divided into military dists, corresponding to the divs. of the agray, and the dist, was the unit of of the army, and the dist. was the unit of administration as well as of territorial command. There were normally 17 divs.,
4 independent cavalry brigades, 2 independent regiments of mt. artillery, and
8 regiments of heavy field artillery. The 8 regiments of heavy field artillery. The military budget for 1941-42 amounted to 1,387,000,000 yen, exclusive of sev. appro-priations for the war with China.

Nary.—In the early days, as we know from the dread of foreign invasion and the wars with Korea and Kublai Khan, J.'s imports amounted to 2,917,000,000 yen, navy was insignificant. In 1635 the policy of isolation led the Tokugawa govto to forbid the building of any vessel capable of crossing the ocean, and the foreign taggression of the middle nineteenth century showed J. defenceless before foreign to sea-power. The nucleus of the navy was formed with a gift of two war vessels from the Dutch and Queen Victoria, and two purchased from the Dutch. Gradually a small force was organised, trained by Brit. officers under Sir Architated Jouglas. The fiest played a part in the Satsuma rehellion, and later J. began herself to build. Her first ironclad was built in England, 1878. At the opening of the war with China, the navy consisted of 28 vessels, wars with Korea and Kubki Khan, J.'s

and 29 torpedo-boats; there were no battleships, while the Chinese possessed two powerful armoured ships of the line. two powerful armoured ships of the line. The naval victories resulted in immediate building on a large scale, chiefly in Europe, and the Russian War saw her with 6 battleships, 8 armoured croisers, 44 other cruisers, and 100 destroyers and torpedobonts. The crushing defeats of the Russian navy of Port Arthur, Togo's victory in the straits of Tsushima and the part the navy played in the First World War have proved the naval power of J. in the l'actific. The statistics for 1940 gave 10 battleships, 7 aircraft carriers, 35 cruisers, 5 coast defence ships, 103 destrocters, 12 torpedo boats and 65 submarines. Under the London Treaty, which procluded the replacement of cap. Ships from 1931 to 1936, the then existing skips were to be modernised and by 1941, ships from 1931 to 1935, the then existing ships were to be modernised and by 1941, the existing cap, ships had mostly been modernised. Great secrecy had been pre-citted concerning programmes of con-struction, with the result that little was struction, with the result that little was known about the bigger warships being built immediately before the outbreak of the second World War; but probably some 5 or 6 battleships of about 45,000 tons, armed with 16-heh guns were in land in 1941. Four armoured ships of 15,000 tons with 12-in. guns were also under construction. Two large aircraft carriers, sev. cruisors, and a large number of destrovers and submarines were also of destroyers and submarines were also being completed. The active personnel numbered 107,000. The gross amount of the naval estimates for 1911-42 was

the naval estimates for 1941-42 was 1241 nillion yen.

I mance.—The ordinary revenue for the year 1944-45 was 14,083,000,000 ven and the extraordinary 36,884,000,000 yen; ordinary expenditure, 20,173,000,000 yen; extraordinary, 30,794,000,000 yen; total invenue and expenditure balanced at 50,967,000,000 yen. The internal debt are at Feb. 28, 1944) was: Consulidated, 72,856,000,000 yen; floating, 1,909,000,000 yen; total '74,765,000,000 yen. The external debt (March 31, 1943) was stated at 1,222,000,000 yen (the external debt anage value at 1.222,000,000 yen (the ex) ange value of the yen in London in 1941 averaged 1s. 24d.). Prin. sources of the revenue before the war were in one tax, land tax, liquot tax, business tax, sugar excise, and tax on consumption of textile fabrics. J. was a protected country and collected a large revenue from customs. In 1939, her imports amounted to 2,917,001,000 yen, and her exports to 3,576,000,000 yen.

are handed down from mother to daughter. Their hair is very carefully dressed and piled with combs and flowers. The children are gaily drossed in the same fashion as their parents. The chief food of the country is rice, and this is served at all three meals, cooked in various wave with fish, eggs, vegetables, and many kinds of pickles. Soups made of fish, vegetables, or obestnute are popular. (hopsticks are used instead of knives and forks. The drink called saki made from formented rice is a favourite beverage; large quantitles of tea are drunk, and the cere-monies attending tea-parties, etc., are both auct. and interesting. The tea-ceremony is believed to have been introduced into J. from China, A.D. 805, and the drinking of tea appears to have started as a more or less religious institution among the Buddhist priests; about 1330 it was adopted by the Daimyos and wealthy nobles. At their famous tea-parties each guest had to guess where the tea they drank had been produced, and if they guessed right they were given one of the valuable presents which adorned the room where they were entertained. These gifts, often rare and beautiful, would afterwards orten rare and beautiful, would afterwards be presented to the singing and daucing girls who entertained the tea-party. It became an exaggerated craze among the upper classes, and was carried to such an extraordinary length that even large fortunes were dissipated. The tea is made in many forms; in one, the leaves are reduced to a powder and the liquid appears as thick as some; another thinner nivture. as thick as soup; another thinner mixture is known as usu-cha. The drinking of teu is even to-day always formal and ceremonious, and each action and gesture is arranged by a code of rules. The usual method of getting about the tas. is in a finrikisha, or little cart pulled by a man, who charges so much a m. Everyone, men. women and children, bathes frequently, some sev. times a day. In the winter the hot baths help to keep the people warm, especially the children, who are accus-tomed to being bathed sometimes five or six times in one day. In Tokyo there are over 800 public baths. The geisha or singing girls are a class well known to the European both in literature and drama. They are usually apprenticed in their seventh year and can raicly reach indesevenin year and can rately reach inde-pendence unless they marry. At one time few Jap. social gatherings would have been considered complete without these pleasing entertainers, but the custom is now dying out under the influence of modern W. styles of entertainment; Language and Literature. - With the ex-

Language and Literature.—With the exception of that of the Luchul Is., no other
language claims relationship to the Jap.
Some authorities include it in the 'Aitaio group'; it is an agglutinative
tongue. Many chinese words are employed, especially for new words, such as
bioyule. It is exceedingly difficult to
learn, and a great deal of Chinese must be
understood as well. There are practically

shirt and a kimono, kept in place by a narrow belt over which is worn the big sash or abi. The materials are usually costly and beautifully embroidered and are handed down from mother to daughter. Their hair is very carefully dressed and piled with combs and flowors. The children are gaily dressed in the same fashion as their parents. The chief food of the country is rice, and this is served at all pulsory in the high schools.

The carliest book we know of is the Koriki (Record of Anct. Matters), A.D. 712. It contains a story of the creation and the heavenly birth of the Jap. race, with a hist, of some of the early emperors, with ser, songs included; nuch of it is dull and crude. The next book, written a.D. 720, is the Nihongi (Chronicles of J.). It was written entirely in Chinese, and from that time most of the literature was pub. in Chinese, Another book about a 750. Another book about A.D. 760, Chineso. tuniese. Another book about A.D. 780, is called the Manyoshiu, or Collection of the Myriad Laures, an anthology of the anct. poems. There are sev. hists., notably anct. poems. There are so that books, and the Nihon Guaishi, a few law books, and a great deal of poetry. The classical a great deal of poetry. The classical romances are exceedingly charming, such as the fairy story entitled Taktori Monogolan, etc. Among the diaries is one called Murasaki Shikibu Niki, written by a Jap. authoress, and very difficult to read. Women have always largely influenced the literature of the country, and have added many works of merit and charm. During the time of peace under the rule of the Tokugawa Shoguns, philosophy was much studied, while popular romances and drama became common. They were, how-ever, mainly influenced by the Chinese, and were often extravagant and horrible, They were, howbut not a few were realistic and humorous. but hat a few were reaustic and minimorous.

After the Restoration an enormous quantity of Eng. and Fr. works were trans, and pub., naturally influencing the literature of the time. Of the modern authors there are four who should be mentioned: Roban Koda, Futabel Hasegawa, Ogai Mori, a king the modern who should the mentioned in the control of the c surgeon-general, and Ichiyo Higuchi who borders on genius in her life-like tales; she died very young; her stories were filled with charm and true to real life.

filled with charm and true to real life.
Lafer writers of the twentesth century
who may be mentioned are Mushakji,
Arishuma, Shiga, Nagayo, Negami, and
Nakajo; the naturalistic writers Oguri
Tayo, Kosurga Tagal, Yanagawa Shunyo,
and Ozaki Koyo and Koyo and Kunikida
Doppo (d. 1908), Tosan, Masamune, Shimamura, Shimazaki, Iwana, and Tokuda, who
are all writers of the naturalistic school.
There were, before the Second World War,
sev. newspapers and jours., and some Jap.
newspapers printed in King. Yokohama
produced the first dally paper, 1871, also
the in-t Eng. Jour., The Japan Mail, 1865.
The Jap. Fress was unfortunately hampered by vigorous conforship. The No
plays are the classical drama of J. Historical dramas and comodies of contemporary
life are the most popular, and many
European works have been trans, and
adapted Tsubouchi is a twentieth century
dramatist of repute. For greater detail
see Drama. Jap. music is at present in
its infancy, and to the sers of Europeans
seems neither pleasant nor melodious.

Art .- The architecture of the country has never attained the great or grand; small things are made perfectly in J., but not so often very large things. Quaint grace and wonderful curves may be met. but no wonderfully proportioned and im-Quaint pressive building greets the stranger; no domes or minarets, or mussive structures, but lightly-built houses and temples of wood and thatch, or sometimes tiled roofs. Walls are scarce, the sides and divs. of houses being of opaque paper screens, re-placed in winter by wooden doors that slide into their places. Even the great temples are composed of wood and mutting, the wood carving being wonderful and beautiful. The view of a tn. from a height appears extraordinarily that and uniform, only an occasional pagoda rearing its beautiful head among the trees. The Jap. architect excels in beautiful detail. In rebuilding the cities that were destroyed by earthquakes J. is following, to a considerable extent, the W. form of architecture. The few concrete buildings that have been in existence in J. for some time have withstood shocks fairly well.

Jap. art is essentially realistic, almost impressionist. Studies from nature are perfect and alice. The art of painting has existed in J. for twelve centuries. Since 1897, when national treasures became proreal art of the nation has become better known. The oldest painting of whose existence we know is a mural decoration in the hall of the temple of Horyusi, near Nara, attributed to a Koreau priest named Doncho about the sixth contury. It clearly shows the colouring and construc-tion of a late example of Buddhist art The first famous native artist of whom we Kanaoka, at the court of the Empetor Sciwa, about v.D. 850; very few of his works have survived, and those that have are chiefly conventional in design, but most perfect in their blending of colours His descendants who continued to the close of the fifteenth century were famous artists, and founded the native school of Wagwa-ryu: the followers of this particular branch of puinting delighted in quaint animals and insects, such as grass hoppers, from, butterflies, and hobgoblins, etc., which they represented with extra ordinary charm and vitality. During the During the ornmary enerm and visitor. During the fifteenth century two Buddhist priests be came very famous, Cho Denshu and Josetsu. The former painted religious subjects, and the latter landscapes and figures. A little later came Kano Mass sobu, probably a follower of the Tosa or Yamato-ryu school and believed to be the Yamato-ryu school and believed to be the pupil of Jostsu, who also instructed Shubun and Sesshu. These three became the leaders of three fumous schools of painting. The Kano school has ontlived the other two: it is still followed to-day, with its generous breadth of idea, its extreme simplicity, and its brilliant colour schames.

and illustrated books. About 1775 Okyo became fumous for his representations of animal life. Following the Kano school came Ogata Korin (d. 1716), a man who left his eccentric and vivid influence on the works of his many pupils: he also excelled in hequer work. The year 1889 saw the last of the old schools; Ryosa, whose favourite themes were ghosts and skeletons, ended the anet, traditions. The W. skyle of palning is gaining influence in W. style of painting is gaining influence in J. but so far no Jap. artist painting in this style has produced any work of outstandlug merit

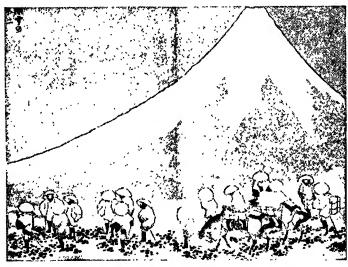
culpture and carving in metal and wood have been a highly developed art in 1 for twelve centuries; many of the templey are store-house; of fine examples, going back as far as the sixth century. sacred images were not the only subjects for the glyptic art, bells, vases, candlesticks, latterns, arms, and armour, all being objects for the artist's skill. Stone was never used to any extent, but brouze, Near, and wood have always been em-plosed from the earliest times. The most patter anet, bronze is the image of Bhaicha diyaguru in the temple at Nara One of the most famous of the country's sculptors was Hidari Jingoro (d, 1634) Some of his chief works were the gateway of the temple at Kyoto and the decorations of the manusleum of Iyeyasu at Nikko. The elaborate metalwork of the sword hilts, when every noble and samurai corned a sword, was for over 460 years a sonderful work of art. Whole families became sword sculptors, and many of these were head in great esteem, while the syords themselves were handed down as tamily heirlooms. The art of inlaying with gold and silver became highly developed at a very early time. A great hal of their bronze work is very fine; one particular kind which colours to a golden particular kind which colours to a golden vellow is remarkable to a degree, and the Jap have excelled in this particular branch of metalwork. The common domestic flower vasca, alcove ornaments, and incense burners are often of exceeding beauty of design and workmanship. The great Brouze Buddha at Nara, and the huge Amida at Kama-Kura, are a proof of their early skill in casting large objects. their early skill in casting large objects. Another branch of art grew quickly with the use of tobacco, and this was the carving of netrake, or buttons employed to suspend the tobacco pouch from the girdle, also the bowl of the pipe and the pouch clasps. I ollowing the netsuke came the okimono, httle ornaments, wouderful copies of cray-fish, dragons, eagles, birds, and the like; some were of large size, but many of the most perfect are tiny little productions to delight either an artist or a child. Woodcarving has, from very anot. days, been one of J.'s greatest arts. The temples bear the records of centuries of exquisite work, but seldom the names of the artists. The smaller wooden figures of the Buddha, treme simplicity, and its brilliant colour schemes.

A new development of art began with such placid faces, in folded drapery, with lotus petals carred for their canopy. Hishikgawa Moronobu (d. 1713); his pictures are filled with delicate work; he jap, wood-carver. The art of the woodgave J, her first beautiful wood-engravings was used for the printing of texts and pictures. The name of Hokusai Nakajima Tet-Sujiro (d. 1849) is well-known in this field; his thirty-six views of Mt. Fuji are of remarkable beauty. He illustrated numberless books, and represented both animal and vegetable life with accuracy and viyidness. He was followed by Hivoand vividness. He was followed by Hiro-shige (1797-1858), who depicted every aspect of his country in numerous sets of prints.

The art of lacquering was a gift from China at the beginning of the sixth century. Plain black lacquer was the first Befor achievement, later mother-of-pearl and hist.

feather, or feature makes their produc-tions anything but impressionist. Their whole art, just as the real national character, stands out for perfection in one main object and disregard of all superfluities.

-The racial origin of the Jap. History.people is still a matter of dispute. anct, chronicles of the country tell that anct. chronicles of the country tell that the god Ninigi descended on an E. peak of the mt. Kirishimayama, on the is. Kyushu, as the forerunner of their first emperor named Jimmu, about 660 B.C. Before this date they have no written hist. The Ainu, or Ainos, appear to have



ONE OF THE FAMOUS VIEWS OF MOUNT FUJI BY HOKUSAI

gold dust decorated the work, followed by gold dust decorated the work, followed by conventional patterns, and still lator by floral designs of great beauty. The interior of the temples and castles were adorned with the most elaborate lacquer work. In all the finer examples of this art gold predominates, and the effect is rich and soft. Enamelling is another development of the modern Jap, artist. Toverbment of the modern Jap. artist. Today vases, bowls, censers, etc. can be
obtained in the finest cloisonné enamel
translucent enamels are
wonderfully decorative, both in delicate
design and exquisite colouring.

According to a survey carried out by Allied H.Q. only 38 of J.'s 5703 greatest national art objects were damaged or desworld War. Jap. art must always appear different from the art of other countries; in one sense it is impressionist by reason of its choice of subjects and want

been the inhabs, of J. when the present people migrated from the adjacent continent, though which part they came from is not proved. The Ainu came from Siberla, and they appear to have found a siberia, and they appear to have found a primitive aboriginal tribe who dwelt in pits and who had been (if they were not then) cannibals. The Ainu drove these people N. and estab. themselves on the main part of the is., but there are not many left now. They were formerly a flerce race, but centuries of oppression have reading of them to deponer any tess also Appren duced them to degeneracy (see also AINUS).

Of the coming of the Jap. and the first

fierce fights for supremacy very little can be written. The real known hist. begins be written. The real known hist. begins with the Emperor Jimmu Jenno; the date ascribed to his accession is 660 B.C. but it was probably later; from him all the emperors of J. are descended. In A.D. 200 a warrior empress called Jingo invaded Korea, crossing from J. with a large fleet and successfully subduing a of detailed background; yet in another large fleet and successfully subduing a sense the perfect painting of every petal, part of Korea. About A.D. 500 the inhab.

Ainu, Mongol, and Malay, ruled by one emperor. Down to 670 the records are emperor. Down to 670 the records are so vague and steeped in legend that it is impossible to say accurately what occurred. About 670 the noble family of Fujiwara became prominent. They governed as agents of the emperor, spending his revenues and oppressing the people. It became customary for the empress to be chosen from their daughters; thus the sarry training of the royal children became early training of the royal children became one of the privileges of this powerful house which, in fact, though not in mane, ruled the empire. They gave J. many scholars and state-men, but being without soldiers or money, except for the imperial revenues, they were gradually ousted by the warrior families of Taira and Minamoto. These two families were at constant war with each other. The Taira were finally exterminated by the Minamoto, about a.D. 1100. For some years after this Yortomo, the chief of the Minamoto should the average while the after this Yoritomo, the chief of the Minamoto, ruled the empire under the title of Sei-1-tai Shogun. He was merely a sacred personage during this time, and accordingly worshipped and flattered and given all he could dee're, but without power. Yoritomo dies in 1124, and the family of Hojo, who acted to the Shoguns in the same capacity that the Fujiwara had acted to the imperial family, became the most powerful. The emperor of China, Kublai Khan, demanded that J. should recognise his suzerainty (1240); on their refusal a large tleet was sent which was destroyed off the coast of Kyushu in 1231, leaving J. free. The Hojo family became enfeelled by their luxury and indolone leaving J. free. The Hojo family became enfeebled by their luxury and indolunce and an organised revolt succeeded in and an organised revolt succeded in driving it out and restoring power to the Emperor Go-Daigo, 1331, who, however, was obliged to abdicate, and fled to the 3, pursued by the soldiers of Ashikaga Takauji. Much trouble and petty warfurensued, and another branch of the imperial family supplied a sovereign; the Ashikaga family held the Shogunate till 1565. But these internal struggles reashing the state of the state o

From 1565-1600 only the strongest warriors could hold any real power, and thus it came about that a low-born groom became the first man in the empire. This man, named Hideyoshi, was noted for his ugliness, his quick wit, and his courage Be is one of the national hences of J, and artist and author have given him undving fame. One other man, Iyevasu, a coinmon soldier, a rising young member of the Tokugawa family became powerful at the same time. These two men came to the same time. These two men came to an agreement and between them over-came the remaining great warrior families oame the remaining great warrior families on the death of Hideyoshi, lyeyasu fought for the supremacy and finally gained it in the great battle of Sekigaliara. After wards he claimed the title of Shogun, and thus founded the line of Tokugawa Shoguns, following up the policy of Iyeyasu, succeeded each other undisturbed. Slowly but inevitably, howering, who ruled till 1868. Kyoto had formerly been the cap, but Iyeyasu substituted Yedo. The military families guns as reactionary and tyrannical. In

became properly one nation, a mixture of | (known as Samural) were now subject to the closest inspection; their estates and incomes were assessed by the Slogun's officials. The Daimyo or feudal chief generally held a castle occupying a commanding position. At this period the right of wearing a sword was the highest privilege, wealth was of little consideration become coverge levelty and filial tion, honour, courage, loyalty, and fillal plety ranking first in the code of ethics followed by the Samurai. The relations of the Daimyo to the Samurai corresponded to those of the medieval European baron, knight, and squire. Iyevasu estab. a military rule of the empire. He stands among the greatest of J.'s statesmen, and

among the greatest of J. a statesmen, and his system of gov, assisted greatly to increase the wealth of the country.

Under the early rule of the Tokugawa Shogana foreigners were welcomed and regular intercourse between Jap, and Europeans began in the stateenth contury. Commercial interest had commenced with the Portuguese about 1542, from whom the Jap, bought arquebuses.

The Rom. Catholic Church now sent a missionary expedition of Jesuits, headed by Francis Xavier, to J. The Jesuits were well received and made good progress with their converts, but their zeal and nergy led at last to their being denounced he governed at last to their being denounced as agritors. Some Franciscans arrived and quarrelled with the Jesuits, and following this the Dutch commenced triading with J.; they, being rigid Protectants were naturally unfriendly with both Sp. and Portuguese. The Jap., anise of at the uncellifying speciacle of all the Europeans quarrelling violently among thus pellogs, became alarmed, the creade ther welves, became alarmed, the creeds of the foreigners appearing to them merciless and fanatical. Therefore the simplest method of ouring this condition we applied: the Spaniards were expelled in 1621, the Portuguese in 1632, and the native converts who refused to give up this foreign creed were exterminated. The native converts who refused to give up this foreign creed were exterminated. The final tragedy of these ill-fated persons took place at the castle of Hara, known as the revolt of the Shima-bara. The Dutch traders were not expelled, but were subjected to severe and humiliating restrictions. No general declings with foreigners were allowed. Ocean-going ships were no longer permitted to be built. The first Firg. man to reach J. was one Wm. Adams (d. 1620). He was pilot on a Dutch trading vessel, and stress of weather drove the ship Charrity to the 1st of Kyushu. He was ship Charity to the 14. of Kyushu. He was summoned to Osaka, and Lyeyasu, appreclating his knowledge of ship-building and sups, refused to allow him to return home. He was presented with an estate at Hemi near Yokosuka, married a Jap. wife, and became known and beloved as Anjin Sama. His men.oiv is preserved by the name of a street in Yedo and an ann. festival on June 15.

1873 the United States sent Commodore Perry with four ships of war to open diplomatio relations; a Russian ship arrived in the same year on the same errand J now woke up to the folly of having isolated herself from the progress of other countries Commodore Perry made his proposal and sailed away, pur posing to return in a few months J wildly flung all her energies into feverish extempts to build forts collect traces and attempts to build forts collect troops, and build ocean going ships once more mately they agreed to Commodore Perry a demands for Amer trude and safety for shipwrecked sallors Perry showed them a model telegraph and a model railway, a motol tengraph and a more rainway, which delighted and amazed the Jap the coming of Perry and the subsequent wwakening of the country led to the downfall of the "hogunate The Daimy or were called together to advise." but they adopted the desperate attitude of resisting the foreigners by force of resisting the foreigners by force. The Shogun understood the position only too clearly he was a far sighted, able statesman his decision was to sign the treaty with Perry and further treaties with Russia, England and the Nether lands. In signing those treaties the Nether lands in signing those treaties the shogun knew that he signed his own downfall. The Dainvoy rose against him and expel the foreigner. Note the the proplet of the state of the counter of the counter of the state became the popular cry the foreigner the foreigner occame the popular cry
The Daimy of Hikone, who sup ported the
Shogun, was murdered by the Daimyo of
Mito A Brit subject named Richardson
was murdered by the retainers of the
Daimyo of Satsum; vengence was Daimyo of Satsuma vengcince was taken for his sake the city of Kagoshima belonging to the Satsuma was bombarded and utterly destroyed. The choshu chief who commanded the entrance to the in land sea at Shimonog ki fired upon foreign ships, the empeter having given him an edict without the knowledge of the Sho gun A squadron of Brit men of wer demolshed the forts of the Choshu and destroyed his ships A fine of 3 000 000 dollars was imposed upon the Choshu his cap being in the hand of the inviders while he was in revolt against the Shogun who therefore could not collect the debt Sir Harry Parkes, intrinted with brit interests in J, arranged that part of the debt should be remitted on the ratification of the treaties. This inded the power of the hogun A foreign fieet was anchored off the entrance to the sacred city of Kyoto, where the emperor resided
That monarch dismissed the officials officials whom the Shogun had appended to carry out the negotiations, and the Shogun resigned in 1865, and was succeeded by Keth. The last of the Tokun was not take her From this time on J began to take her

right place among progressive nations. The emperor became the head in fact and not in theory In 1671 an imperial decree abolished weal autonomy the feudal system was to be a thing of the past. In

1853 the United States sent Commodore Perry with four ships of war to open diplomatio relations; a Russian ship arrived in the same year on the same errand J now woke up to the folly of having isolated herself from the progress of other countries Commodore Perry made his proposal and sailed away, pur posing to return in a few months J shope of the feudal nobles and Samurai also occasionally despatched themselves when the proposal and sailed away in the feudal nobles and Samurai also occasionally despatched themselves when the proposal part and few months of the feudal nobles and Samurai also occasionally despatched themselves when the proposal part and few months of the feudal nobles and Samurai also occasionally despatched themselves when honour or loyalty demanded it of them

The country now set herself the difficult task of thoroughly learning and practising the institutions of Furope and America. the institutions of Furope and America.

ome fifty five men by no means all noble commenced the work of reconstruction Many were murdered, some were executed and not a few broke down with overwork Among the greatest names honoured eventore by their country are Prince Ito who framed the first constitution for J and who died by the hand of a mad assessin in Korea, Saigo Pakamori, Itagaki, Okubo, and Kido The next period is known as the Midii era knellshmen were employed in knehshmen were employed in Melil era the construction of railways, telegraphs, etc. and in the organisation of the navy, Amers supervised her system of postal service also her agric arrangements and her education. I renchmen trained her solutes in modern tactics and recast the laws while Gers assisted with medical scence and local gov. In 1889 the Em-peror Mutsuhito gavo J her pro war con-4titution

The next difficulty the country had to fa (was the question of Korea, that peninsula was too close to the vital part of I to be a comfortable home for another of I to be a comfortable nome for another nation. Ching was not anyious to see Loren occupied by the Jap any more than the I tter were to see it governed by China. Matters reached a crisis in July, 1891 and war was declared between the two countries. The struggle became a succession of victories for J. First a naval encounter took place between three Chin contributions and three Jap. One Chinese ship was taken, CIM (I cruict One Chinese ship was taken, one shattered and endered usekes, and the third evenued badly damaged. The first land victory took place at Phyongyur the Chinese lost 6000 men and the Lu only 700. Then came the naval battle of the mouth of the Yalu R which prived a disastrous defeat for China. Jether wized the Chinese pages notes of proved a disastrous defeat for China, Jethen sered the Chinese naval ports of Allien Port Arthur and Weihai wei. The Chinese commander Adm Ting, committed suicide unable to bear the fanced disgrace of defeat. This was the end of the war. The treaty of Shimonowski (1890) declared korea absolutely independent, coded the Jert of Manchell Tormosa and the Pescadores, compelling China to pay 200,000,000 tacks independently. It is victory was hard won, having cost 20 000 lives and £20,000,000. The interference of the European Powers. The interference of the European Powers and her own crippled condition compelled her to give back to (hins the ter on the 1876 the pensions of the Samural were commuted and swords were forbidden to be worn. The Satsuma clan alone remained conservative and rose against the gov. (Jan ->ept 1877) in a short-lived revolt. This ended further trouble with the Sumarai, many of these men, loyal.

China were watched by J. with increasing | auxiety. In 1904 matters came to the expected crisis, and J. declared war against Russia (see Russo-Japanese against WAR). WAR). To the amazement of Europe. Russia was defeated, peace was concluded in 1905, and a froat; was signed at Potts-mouth, New Hampshire, U.S.A. In 1905 the new Anglo-Jap. treaty was signed in London for the purpose of maintaining peace in E. Asia, ensuring the integrity and independence of thing with the policy of the open door for all nations, and for mutual defence of the territorial rights of mutual defence of the ferritorial rights of the two contracting powers in the Far E and India. In 1911 this was renewed for ten years with modifications. The in-tegrity of ('hina was the basis of agree-ments with Russia and France (1907), and a common policy in regard to Far E. and Pacific questions was formulated in ident-feal notes between J. and the U.S.A. in ical notes between J. and the U.S.A. in 1908. In 1910, 1911, and 1912 agree-ments were signed with Russia in refer-

ments were signed with trusta in reter-ence to (hins, Manchura, and Mongolia. The great Emperor Mutsuhito died in 1912; he had reigned for forty-five voars. On his accession he had inherited a petty Oriontal state at leath he left his son 1912; he had related for forty-five vents. On his accession he had inherited a petty to Oriontal state at interfect a petty to Oriontal state at interfect a petty to Oriontal state at interfect and inherited a petty to Oriontal state at interfect and int him, and became known as Emperor Taisho. At the beginning of his reign, the ministry of the Marquis Saloni came to an end, being split upon the decision of the war minister, Gen. Uyehara, to keep two army divs. in Korea, where there had been a conspiracy against the Jap Governor, Count Terachi. The offer of Prince Katsuri to form a ministry was not accepted by the Lower House, and Katsuri thereupon formed a new party, called Rikken Poshi-Kai or the Constitutional Crusaders' Association, but in 1913 he died of cancer. In Feb. 1913 the Yamadied of cancer. In Feb. 1913 the Yama-moto ministry came into power, but soon after fell owing to the Naval Scandal, aroused by the fact that bribes had been accepted by Jap. officials from the Siemen-Schuckart Company over the building of a Jap. battleship. After an interval, m which Viscount Kiyoura tried in van to form a Cabinet. Count Okuma came into which Viscount Kiyoura tried in vain to form a Cabinet. Count Okuma came into power on April 14, 1914, with the assistance of the new Doshi-Kai party. Baron Kato was made foreign minister, and after the outbreak of the First World War in Aug. 1914, he enunciated the national policy that 'J. had no desire nor inclination to become involved in the present conflict. but she believed she oved it to conflict, but she believed she owed it to herself to be faithful to the Alliance (2.4 with Great Britain) and to strengthen its berself to be faithful to the Alliance (a.) laws concerning women and children were with Greet Britain) and to strengthen its foundations by ensuring permanent poach, and welfare work was instituted in the E. and protecting the special interests of the Allied Powers. On Aug. 15, Czechoslowakian army to escape from an ultimatum was issued to Germany desmitted that all Ger. battleships should be withdrawn from Jap. and Chinese

waters, and that the whole of the leased ter. of Kiao-Chiau should be delivered up by Sept. 15 and ultimately restored to China Having received no reply from Germany, J. declared war on Aug 24. On Sept. 2 the Jap. array landed in Kiao-chiau and, having been joined by a small Auglo-Indian force, commenced the siege of the forts, which, by Nov 7, surrendered. On Nov 16, the Allies occupied Tsinctau (q 1) Meanwhile the Jap fleet was active in the Pacific, destroying the prestige there of the Ger navy and capturing the Caro-lines the Marshall, and the Marianne is.

On Jan 18, 1915, J. suprised the world by Issuing to China the unwarranted Twenty-One demands (see also under Chiva). These were divided into five groups, of which the last aroused the most bitter controversy. Among other things it demanded that the Chinese should employ Jap advisers in their affairs, that the piot Jap advises in their mairs, that the Jap should have the right to build hospitals, schools, etc., in the interior, that a jointh-administered Jap, and Chinese useful should be set up, and that the control of certain railways together with the test of control to the the state of control to the state of t

By the treaty of Versallius 1919, J. t. (ceived, under mandate, the former Ger. colonies, the Caroline, Marshall, Marianne, and Pelew is, together with Kiao-Chau. The difficulty with China, resulting from this latter award, was the subject of the Pacific section of the Washington Conference (q r.). Kiao-Chau, together with other former Ger. ter. in Shantung, was returned to China, while a treaty of Naval December of the Alexandra of the Alexand Disarmament between J., Gwat Britain, France, and the U.S.A. was concluded, and. in this, the former Anglo-Jan, Alliance was merged. In domestic affairs, both during and after the War, J. was both during and after the War, J. was undergoing extremely rapid industrial development but had not escaped war profiteering, and this, coupled with the increased cost of living, caused resembnent and ricting. Before 1916 trade unions were practically unknown in J., but after that year they because increasingly powerful. Discontent appears the worker. that vear they became increasingly power-ful. Discontent among the workers tound expression in strikes, of which there were 417 in 1917 and nearly 500 in 1918. The rice riots of that year brought about the downfall of Tersucht, who had suc-ceded Okuma as head of the gov. in 1915. A new gov. was formed with Takashi Haru, a commoner, at its head. Factory Siberia suffered at the hands of the Bolsheviks, and it was not until 1923 that the Jap. commenced the evacuation of their troops.

At the Versailles Peace Conference, J sought to obtain the recognition of racial equality, but the required unanimous vote was not forthcoming. In 1923, the sym was not torcuculant. In 132, the synthety pathy and help of the world were extended to J to repair the damage caused by the terrible earthquake of that year (see supra and under EARTHQUARE). It may be mentioned here that the next serious carbonate in Large that which a true. be mentioned here that the next serious earthquake in J. was that which struck central J. and the is. of Shikoku on Dec. 21, 1946, causing damage over an area 400 m. by 150 m or about five-sixths as severe as that of 1923 In Sept. 1923, a gov. was formed by Yamamoto, after an interval of unstable ministries following the assassination of Hara on Nov 4, 1921. In Dec. of 1923, however, the attempted assassination of the Prince Regent caused Yamamoto to resign, and a new Cabinet was formed by Viscount Kiyoura. This gov. was unpopular, and Kiyoura. This gov. was unpopular, and tell the following year, owing to the resentment aroused in J by the Amei Immigration Law, passed in Mav 1924, forbidding Asiatios to enter the USA General elections were held in J at this time, and elections were held in J at this time, and Viscount Takasti Kato came into office with a gov. which was a Coalit.on between the Sevyu-Kat, or Constitutional Political Association, and the Kensei-Kai, which party had arisen out of the Doshi Kai. The prin. achievement of this gov. was in granting universal suffrage to all men over the age of twenty-five. On the death of Kato, the premiership fell to Wakatsuki On Dec. 25, 1926, the old Emperor Taisho died, and was succeeded by the Crown Prince, who had acted as Prince Regent since 1922, and now became the Emperor Hirohito. In the succeeding years, J was mainly occupied with reconstruction was mainly occupied with reconstruction at home and the rebuilding of Tokyo, and in foreign affairs with the problem of navei security. Much criticism was levelled at the foreign minister, Baron Chidehaia, on the grounds that the ratios with regard to naval strength accepted at the London Conference were inadequate for the protection of J. (see London Conference). In 1934 J gave notice of trainintion of the Washington Treaty of 1932 (see Washington Treaty of 1932 (see Washington Treaty of 1932 (see Washington Treaty of 1932). In Manchuria, excited grave apprehension (see also China—History Surerial of Japanese fendal institutions—After the middle of the nineteenth centry, when the influence of W surer and the grounds that the ratios with regard to

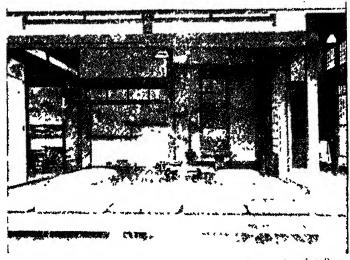
tury, when the influence of W science and technology began to infiltrate into the I ar methods of modern industry and warfaro. At the same time she attempted to carry out the so called continental policy, which contemplated the conquest of all ('hina and warfaro').

absorbed was the superficial aspects of Chinese and W. culture. Her feudal in-stitutions survived to the period of the Second World War Down to 1946 there was no social or political equality and the people were divided into strictly defined classes the royal family, the aristocrats, the variors, and the commoners. The foundation of modern or pre-1946 J. was laid during the Meli Restoration which began in 1868. The authority of the rotal family was greatly enhanced and the noble and warnor classes became the real governing classes controlling nearly all political, military, and economic power. The much extolled Meiji Restoration resulted in the oppression of the masses, whose psychology became a curious com-pound fashioned of modern industrialism and medieval feudalism, a complex essen-tially favourable to militarism from above. Military expansion followed naturally. Korea was overrun and there were easy victories over China and Russia in 1895 and 1905 After the unification of Germany under Bismarck, military training in J was a slavish imitation of the Ger. system. The Mein period also brought with it the rise of the zerbaffu, the modern Jap financial oligarchy who, like the militarists, came from the aristocratic class and who generally co-operated with the militarists in exploiting the masses and in furthering the Jan Course makes and in furthering the Jap foreign policy of expansion J's earliest modern industries were war industries. It was during the ino lap wars that the notorious Mitsul and Mitsubishi combines developed the power, controlling practically all Man hutlan enterprises and giving their support unconditionally to the all-dominant militarists Political parties were organised in this period, but this too was a movement from above and not from the puple. The founders of the parties. Taisuke Itagaki, Hirobumi Ito, and Taro Katsura came from the old aristocratic class such men had no sympathy with nor even understanding of democracy. Jan parl, institutions were a sham and corruption and bribery at elections were rife the financial oligarchy controlled the parliament, the military clique controlled the functions and the people had no voice No Jup cabinet could be formed without the consent of the Army and the Navy The war minister and the and the Navy The war minister and the minister of the navy had to be, respectively, a general and an admial on the active list, and although they were members of the cabinet they were independent of cabinet control and enjoyed direct

access to the emperor.

Japan's Manchuran adventure.—J.'s policy towards China had openly abandoned conciliation in 1931 when the military party, swamping the Liberal gov, baunched an armed adventure in Manchuria, which soon brought the entire prov. under Jap control. J.'s interven-tion in Manchuria was little more than the obvious result of a fundamental concontemplated the conquest of all China and, eventually of an unlimited portion prov. under Jap control. J.'s intervention of Asia. It is only against the background of J.'s social and political structure that her world outlook in the twentieth century can be understood, with those of Chinas. J. realised that Centuries of geographical and mental isocial control of the S. Manchurian Railway. Relying on her privileged position in Manchuria. J had invested great sums in mining and other primary resources of Manchuria-enterprises of vital importance to I.'s great home pop. Attempts to negotiate a settlement with China naturally proved abortive and the Jan. military leaders.

made suggestions for setting up a special regime in Manchuria, recognising Chinese sovereignty and, at the same time, safe-guarding J.'s rights. But J. had already set up a puppet gov. and created a new State, which she called Manchukuo; and her reply to the League was that she was a settlement with China naturally proved abortive and the Jap. military leaders, at mg in self-defone and that, in any without even consulting the Tokyo gov., there was no central gov. In China hurled their forces against the whole zone of the railway. After the disam ng of the railway. After the disam ng of the garrison at Mukden and the capture forces and, having withdrawn from the GKirlin, the Jap, authorities held the I league of Nations, her troops advanced hand, and the dispute was referred to the



Canadian Pacific

INTERIOR OF A JUNANESE HOUSE

League of Nations and the Chancellerie of Tokyo and Washington. The Leaven imposed a fine-built on J. to withdra all troops within the treaty zone, who did while insisting that the disput could be settled only by direct Smo-Lap could be settled only by dilect Sino-Lap negotations. An attempt by the Power to find a way out through the Keller Pact (q.r.) was equally unsuccessful. The Jap. gov., adopting delaying tacins, steadily pursued their conquests, and their troops, crossing the Chinese E. Rajiway, took Chinehow, the headquaters of the Chinese commander in chief. By the

out of the whole of that prov. and S. of the Great Wall.

After the occupation of Manchukuo medents of forward movement alternated with periods of relative calm. when periods of relative calm. Every succeeding year saw a further milestone on J's road to empire. Thus, in 1933, it was the final lopping of Johol, with its old Chinese imperial palaces, its coal and strategic mt. passes, from the main body of China and its incorporation in Manchukuo. In 1935 came the elimination of the last vertice of the traditione! Passets. steadily pursued their conquests, and then troops, crossing the Chinese E. Railway, took Chinese commander-in-chief. By the end of the year (1931) they had overing 200,000 sq. m., with no more than 20,000 troops. Later, a large Jap, force was landed in Shanghal, where heavy fighting began early in 1932. Meanwhite (Decombor 1931) the Lesque appointed a commission of enquiry in Manchuris under Lord Lytton, whose report (Oct. 1932) the counivance of the Jap, military authorities, of a puppet regime under Jukeng in the W. dista. of N. Ohina. Early in 1936 irregular forces, issuing from Manchukuo, drove the Chinese forces out of the prov. of Chahar, and estab. a pro-Jap. regime in that sparsely-populated ter The Jap, foreign minister (Roki Hirota) now put forward three points as essential pre-requisites of Sino-Jap, understanding co-operation in suppressing communism recognition of Manchukuo by China, and the cessation by China of all unfriendly actions in relation to J. and to the policy of 'playing off a third Power against J' The first and third were capable of the widest interpretation and could even justify J. asserting the right to supervise China's foreign relations and to send troops to any part of China where 'communist' forces might be operating.

In line with the policy of expansion on land was the denunciation by the Jap. gov. of the Washington Naval Treaty and its refused to conclude any new naval agreement except on the basis of parity with Great Britain and the U.S.A. I might be regarded, slouz with Germany and Italy at this time, as one of the three major dissatisfied or 'have-not' Fowers of the world. There is abundant statistical evidence that I is economic position was, and is to-day, that of a proletarian nation.

J. depended almost eptirely on foreign sources for such vitally important raw materials as cotton, wool, rubber, and oil, which were the life-blood of many of its chief industries; and there is no mineral of any consequence which J. possessed or or any consequence which J. possessed or possesses in surplus quantities. It would be an over-simplification to suggest that the Jap. army 'staged' the scizure of Manchuria merely as a means of restoring its shaken prestige at home and driving the shaken prestige at home and driving ilberalism and pacifism into the back-ground. Other considerations were tn-volved: the many unsettled economic disputes with the Chinese authorities the desire to push back the reviving Russian influence in the l'ur E., and the disposition of the Manchurian ruler to establish closer relations with the Nation-alist regime in China. But that the Jap. army took full advantage of the strengthened position which it acquired as a result of the outbreak of hostilities in Man-churia is unmistakable. Behind the Jap. sweep towards empire at all costs were a whole complex of impelling forces. Pan-Asianism had its part. Outside J. pan-Asianism was a negligible factor until after the Second World War, when Nationalism among colonial races became active. But if the Jap. empire was to expand further, pan-Asianism, to a certain type of Jap. mind, might become a formidable slogan. J.'s sweep towards imperial expansion was by no means purely military and territorial in character. Goods with the made in Japan mark won their victories and made their enemies, just a, the Jap soldiers on the battlefields of Manchurla and Jehol. J's advance to a commanding position on the Asiafic continent might at and Jehol. this time be graphically represented by three arrows, pointing in different quart-

ers: the first pointed N. to Manchukuo and the troubled frontiers with Russia: the second pointed W. to China, where the destiny of J. as an imperial Power might well be settled either way: and the third pointed S. to the rich tropical lands of the European Powers and America, where J.'s activities had thus far been purely commercial in character.

J. a artifice had in the lar best purely commercial in character. Japanese 'co-presperty sphere'—The attack on Pearl Harbour. 'The collapse of Holland and France in 1940 at once led to extremist demands for Jap, interven-tion in the European War and for the occupation of Dutch and Fr. E. Indian possessions. To that end the very phase East Asia, coined by the Jap, with the political implications of an E. 'Monroe doctrine,' carried its obvious menace. J. now demanded that all sundoctrine,' carried its obvious J. now demanded that all supmenace. plies passing through Fr. Indo-Chiua to the Chinese gov. at Chungking should cease and that all supplies going to Gen Chiang-kul-shek through Burma and Hong Kong should also cease. At the some time Jap. troops were moved to the 25-m. frontier of kowloon and a land blockade of the concession there was boonockade of the conversion there was no gun. These moves had their impulse in J.'a incerce desire to settle what the Jap. gov. sixled the 'China incident,' which every statement of Jap. policy admitted to be the gov.'s first pre-occupation J's forcign minister, Arita, now outlined J's conception of a new order 'united under a single sphere 'of Jap hegemons which would cover 'East Asia' and the S. reas. Thus the species of Jap 'Monroe dortrine, 'instetypressed in 1934, was now widened so as to include a vast respectful as a matter was now the content of th unspecified area which might embrace any land from Java-to Taliti. In fact, expansion southwards had long been the policy of an influential section of Japopimon, and J. had therefore steadily in crossed her share of the shipping in the S. Seas; while the war in China had, as we have seen, given a new significance to such expansion. The tone of the demands put expansion. The tone of the demands put forward in the middle of 1940 suggested that the collapse of France had encouraged the extremists and, through them, the Jap gov., to new intransigence. But the Jap gov., to new intransigence But the But theet, strongly based on Singapore, was by no means a negligible factor, and behnd the Brit. stood, if at this time somewhat equivocally, the Amer. feet, which had not been materially weakened which had not been insternally weakened by the events of the preceding months But though the Jap. gov occupied Fr Indo China (q.w.) they found themselves fully occupied in China, where the Nation-alist forces were slowly but certainly gainany torces were slowly but certainly gaming strength and coaducting, not unsuccessfully, an unremitting guerilla warfare. Yet by the end of 1941 J. had
attempted no rash move, though the new
gov. of Gon. Tojo entertained, in view of
Russia's pre-occupation with the Ger. invasion, the most grandless schemes—
schemes which the Brit. Gov. realised
might well affect India. J.'s occupation
of Fr. Indoc/thin was in realist on atmight well affect India. J.'s occupation of Fr. Indo-China was in reality an at-tempt to outflank Brits. and Amer. defences in the Far R. as a first measure

to secure dictatorial control of vast tors.

mediate threat to India from the W., and the Jap. plan for creating a new order in Asia sought to eliminate the historically estab. rights of Great Britain, the U.S.A., estab. rights of Great Britain, the U.S.A., and other W. Powers in that region and aimed at establishing a 'benevolent' political domination over China, the Philippines, Indo-China, Thailand, Maleya, the Netherlands & Indies, Burma, India, and Ceylon. This project, growing out of J.'s paintnership with the Axis Powers (see also BERLIN, PACT OT) was framed in such bitch sounding assertions as a that J. such high-sounding assertions as that J such mga-sounding assertions as that desired to see Aslatic peoples ruled by themselves; but it was also accompanied by a scheme of economic 'co-prosperity' which really meant that J. hoped to secure vast resources of raw materials in exchange for goods of her own manuf. These Jap, ambitions in Asia were, of course, closely modelled on Nazi ambitions in Europe, and were accompanied by the same cry for 'living space, the same imputation of 'encirclement,' and the same declared intention to create a new conomic system for 'liberated 'peoples. Outwardly the Jap on was to prove that the W. Powers had no right to influence Aslatio life and culture: actually the in-tention was to enable J. to become over lord of the Orient under an economic polity which would have no place for the W. Powers, uchaing even hor own Axis partners. Memorally the Brit author ties strongthened the detences in Malaya and the Brit and Aner. Govs. applied economic sanctions to J. beginning a July, 1941, with the 'freeing' of Jan neet in reply to the Jap, move against Fr Indo-China, while the Dutch authorities move it clear that they would protect their interests in the event of turther Jap adventures.

It was evident, when Gen. Tojo, a professional soldier, replaced Prince Komove as premier (Det 1941) that J. was con-templating further military activities on templating further initially activities on a scale in conformity with the principles outlined above. Tojo's gov. now began secretly to make naval and military dispositions on a most comprehensive plan, with the view of simultaneously attacking Brit, and Amer Far E. possessions at a moment most convenient for ensuring at least initial snocess. Delay would mean, in fact, giving up their dreams of foreing J.'s will on the Pacific and E. Asia and furthermore, J. a stilking power was now at its peak. Hesides these considerations, at its pouk. littler was foreign her hand in order to divert, if possible, the material aid which America was giving to the Russian armies America was gring to the investor armire with disastrous results on his Russian campaign. Tolo, therefore, sent a special envoy to Washington to join Adm Nomara, Jap. ambassador, in order to conduct mock negotiations for a settlement of outstanding differences with the united States. In the course of these negotiatious President Roosevolt sent a necessarial measure to the superpose of the personal message to the emporor of J. in

where democratic theories were taking formal declaration of war, suddenly, on root. The strengthening of the Allied Dec 7, attacked Pearl Harbour and other line in the Middle E. had removed the im-Amer. bases in the Pacific and, after this outrage on conventional diplomatic procedure, announced that J. was at war with both Great Britain and the U.S., in the W. Pacific. Both these countries promptly declared war on J.

promptly declared war on J.

The first two years of the war in the Pacific.—Soon after the attack on Pearl Harbour Jap. planes bombed and sank the great Birt. warships Prince of Wales and Repulse, thus gaining command of the sous in the S. Pacific. By the early days of 1912 they had swept through Thalland (Slam) to Burma and captured Prince, Honz Kong, and the greater part of the Birt Malay peninsula and were landing tresh troops in the Philippines. Thus in the early period of the war in the Par P., Jap. arms carried all before them. Attempts by the Allies to hold fortresses and conduct campaigns without aircraft cover failed disastronsly: Hong Kong, Malaya, and Singapore were inevitably lost in this way; and the Jap. conquered the Netherlands E. Indies. Borneo, the Philippines, the Andamans, and most of Burum and, by cutting the Burma Road (1.".) they isolated China. Only as Butain and Araerica increased their aircover was Jap, expansion stopped east-1912) followed in the next month by the buttle of Midway Is.; and westward by the defeat of air attacks on Ceylon. I hroughout 1942, however, the Jap. war took second place in the eyes of Brit. and Amer, statesmen, who were bent on in-resisting their effort against Germany as odering by far the greater danger. But by pursuing an offensive in Papua the the mainland of Australia and it was essential for the Allies to theck any further advance. Hence in a strenuous campaign over jungle and mt. terrain Australian troops repelled the invaders and captured tions and Buns, the Jap base on the N. saist of New Chima, externi uting their gerrisons. While this war o is in progress Amor, marines were landed on the large is, of Guadalcanal (q.r.) in the Solomons and captured an acodrome which the Jap. had recently constructed there. For long the Jap, fourth hard to regain the acrodrome but by Feb. 1913 the Amers, had captured the is. This provided the point d'apput for a long-drawn but effective process of 'island hopping,' which gradually pierced the far-flung outer chain of strongholds covering J. from the Pacific, a process in which the over-growing air and naval superiority of the Amers, eventually asserted itself. For some time after the Jap, had been driven out of the dalcanal no big land action was fought in the Pacific theatre, but the Amers, continued to bomb Jap. bases and, by combined sea and air operations, thwarted all Jap. efforts to rein-force their positions, especially in what is known as the battle of the Bismarck Sea' (March 1943) when J. lost ten warships, the vain hope of effecting an understand-over one hundred aircraft, and 15,000 men. ing; but the Jap. Gov., without any In the middle of 1943 the Amers. landed torces on Now Georgia, while the Australians made progress along the N. conat of New Guinea. Lae and Salamaua, the two chief Jap. bases on Now Guinea, were taken by the Australians in Sept. 1943 Rabaul, the great Jap. base in New Britain, was overcome by the Amers, at the end of the year, who were enabled to gain control through the construction of distant airfields. The first ter. takon from J., which was not a more recovery but had been in Jap. hands before the war, was the Marshall is., which gave a base for bombing Truk, in the Carolines, the greatest of J.'s Pacific bases, and continuing their westward and northward advance the Amers. by the middle of 1944, reached the Marlanas and captured the strongly fortified is, of Salnan, where at last they had secured an air-base within long-distance bombing range of both the

Philippines and of J. itself.

The last two years of the war in the Pacific.—The continual deterioration of the war situation, both for J. herself and for her ally, Germany, throughout the period of the Kolso cabinet brought that gov. down in April, 1945. Political devel opments within J. reflected events in the military and naval fields in 1344—45 Most serious of all, the Jap navy was now definitely deprived of command of the sea syen in those inner waters in which it was expected to have a great strategic advantage, so that J's shipping routes through the E. and S. China scea, and even the coasts of J. herself, were laid open to attack. This meant the breakdown of J'a original strategy, which relied on the bases in the Carolines, Marianes, Philippines, and Ryukyu Is. as 'unsinkable aircraft carriers' for covering J's maritime communications to the mainland of Asia and the Malay Archipelago and for preventing a close approach of the enemy by sea to the Jap. homeland. It meant also that J. was subjected to air attacks beaver than was expected; strong carrier-based air forces, as well as Super-Fortresses from Saipan now took part in raids, and after the Amer. capture of Iwojima in the Bonins land-based fighter aircraft were able to support the bombers and the relative invulnerability hitherto given to J by her geographical remotenoes from Alled bases was being rapidly discounted

Allied bases was being fapility discounted J.'s hope of using Burma as a springboard for invading India had been finally destroyed by the failure of the Jap thrust into Manipur in the spring of 1944 but Burma was still useful for defending the land approaches to Siam and Malaya and blocking the Burma Road supply route to China. Hence J. was prepared to fight stubbornly to hold it, and with the greater hope of success from the fact that the task of the allied leader, Adm. Mountbatters was made more difficult through the low priority for shipping and mountbatters was made more difficult through the low priority for shipping and landing caft allotted to his 5.E. Asis Command. During the winter of 1941-45 Adm. Mountbatten was restricted to an offensive campaign by land across densely forested mt. ranges between India and Burma, hampered by the most formidable difficulties of transport. But

these difficulties were overcome, largely by the aid of airborne supplies, and with the capture of Mandalay the Jap, hold on Upper Burma was broken. Again, the Ailled success at Myit you had led to the prolongation of the road from Lede to meet the old Burma Road, and it was possible once more to send forries through to China.

In striking contrast to the ship-starved offensive of the S.E. And Command of Adm. Mounthatten, the Amer. invasion of the Philippines under Gen. MacArthur was carried out with an immense concen-tration of maritime transport and newlytration of maritime transport and newly-built landing craft. Against this massive attack the Tap. had some 200,000 men in the Philippines, but they were scattered over many different is, and the native pop was either apathetic or hostile. Even in the inner waters of the archipelago movement by see between the is, was threatened by Amer air attack. For J., therefore, everything depended on victory over the Amer. fleet without command of the sea, the dispersed Jap land forces would be isolated in their various captured is It was the moment for J. to risk a naval battle and in Oct 1944 the main strength of the lap navy was de-ployed in a determined attempt to crush the Amer naval force which was covering the invasion of Leyte. The battle which ensued was a decisive defeat for the Jap The battle which and it decided the fate of the Philippines. Strategically the Amer reconquest of Manda with the naval harbour of Cavite meant that all Jap shipping routes S. of Formosa and Hong Kong were now exposed to close naval and air attack. The vast ters to W and S of the S (hina Sea overrun by the Jap since 1910 comprising Indo thua, Slam, Burma Malaya, and the Dutch E Indies, were now virtually attack from J by any cut of from J. by sea Some slight com-pensation was provided for J by the success of an offensive in S China which success of an offensive in S. China which opened a land corridor from the middle Yangtee to Indo-China, but this could be only of limited use for inilitary movements. To all intents and purposes J. lad now lost the resources of the S lands and her garrisons remaining there were simple to the stands of the stands and her garrisons remaining there were simple to the stands of the munications from Hankow 3 -westward to Indo China and southward to Canton violded overland routes valuable for Jap. continental strategy, besides defeating and dispersing large Chinese armies in Kwangsi and Kwangtung and resulting in the capture of a number of airfields constructed at great expense by the Amers. for the use of their air forces in China. The Lip, commander in chief in China responsible for this successful campaign tion II ita, was made a field-marshal and brought back to J. to be mepoctor-general of military training, and in 1915, he was appointed by the Suzuki Gov. one of the two commanders for the military defence of the Jup homeland. The Jap.

from a new direction—from the sea which the Jap. navy had formerly controlled, but controlled no longer. The Jap., now that Germany was beaton, had to prepure to defend Hong Kong, Canton, Amoy, and Shanghai against Allied seaborne invasion. They had also to prepare to defend Indo-China against attack from the sea now that the Amers. were estab. in the Philip-

pines.

pines.

For the ordinary Jap., however, and indeed for his rulers, no thentre of war could compare with the homeland in importance. For the shinkoku or 'divine land' was now threatened with invasion from the sea. The loss of Salpan had brought down the Tojo cabinet and the tears aroused by this event were soon realised in 'Super-Fortress' raids on the industrial cities of central J., including Tokyo itself. Soon the premier, Korso, had to admit the loss of Iwojima (March 21, 1945) and the Jap. navy, after its 21, 1945) and the Jap. navy, after its mauling in the Philippine waters, did not dars to go to the recue of the garrison Then Adm. Nimitz invaded Okinawa, an is, of the Rynkyu group commanding the sea approaches to Shanghei as well as to S.W. J. The air-raids by the great Amer bombers reac' da linax in March-June and with the promise of still worse to come. The gov. was petitioned to take more drastic action in the matter of shelters in Tokyo but was powerless to do more than advise everybody not needed in Tokyo to depart at once, huge areas of the cap, being now devastated.

The prospect in the spring of 1945 that Germany would be defeated confronted J. with a major problem which was at once political and strategic. For obviously with Germany out of the war, far greater forces would be available to concentrate on J. But whether to give up the outer zone of conquests from Burma to the Carolines and concentrate on the defence of the inner zone comprising J. itself, Korea, Manchuria and China, was a nores, manonuria and China, was a problem which brought extremists and moderates in sharp conflict with each other. Kolso told the Diet on March 23 that J. intended to take the offensive to retake Iwojima, Saipan, and Guadal-canal. Okinawa had not then fallen and of the other is. Yet he was unable to explain how J. could effect such a mirack if her Navy dared not venture out of ichome waters. But the extremists, often in her Naty dared not will use out of its home waters. But the extremists, often composed of the more youthful officers, could not prevail against the general staffs and the Zaibatsu or great business housewhose minds had not, of course, been de luded by the fraudulent war-time Jappropaganda. These knew, even before the end of 1944, that the tide of war had definitely turned against 1 and that it definitely turned against J. and that it would soon be a question of trying to get would soon be a question of trying to get out of the war on terms falling far shot of J.'s original ambitions. Thus, while as yet there was no question of uncondi-tional surrender, it was essential to get rid of the ultra-extremists who would bur the way to any hope of peace negotiations. on Pearl Harbour and Aug. 1945 some Therefore in April (1945) the influential 320 Jap. warships had been sunk or put groups secured the appointment as Prime out of action, including 11 battleships.

Minister of Adm. Suzuki, former Grand Chumberlain, in place of Koiso. Yet even before this, statesmen behind the throne had been preparing the way for such an appointment and restraining the agration of Col. Kingore Hashimoto's fanatical followers for a 'regeneration' of the political structure. Koiso, though an extremist in foreign policy, was a conservative in domestic affairs, and therefore willing to co-operate with the elder states. willing to co-operate with the elder statesmen against Hashimoto, whose group wanted to get rid of the Scijukai and multitute a largo, unified, and disciplined Party State on the familiar fascist model. Party State on the familiar fascist model. The Seijukai had, since 1942, been the only recognised political organisation, but it had never had any real political stamina and behind this façade the old-time political retained their party groupings and more or less supported the gov. of the day. But apart from these party difficulties, Koiso also found the same difficulty as his predecessor, Tojo, had in securing effective co-ordination between the gov. and the High Command. Tojo had been his own war minister and had ultimately made himself chief of the army had been his own war minister and had ultimately made himself chief of the army general staff as well; Kolso deemed it imprudent to excite criticism by arrogating these posts to himself and therefore tried to co-ordinate their functions through the Cabinet secretary. But there were repeated changes in this office, one appointee after another being regarded as unsuitable—an indication more of the gravity of the administrative crisis facing the gov. than of the inherent importance of the office.

Closing days of the war and surrender of

Closing days of the war and surrender of Japan.—The Jap. garrison of 100,000 men on Okinawa defended the is, with the men on Okinawa defended the is, with the utnot tenacity, as indeed had the garrison of 20,000 on Iwojima, but organised resistance on Okinawa ceased on June 21. The campaign in the Philippines ceased at the end of the month. On July 14 J. was bombarded by Amer. warships. Then, on Aug. 6, the first atomic bomb was dropped on J. at Hiroslama (q.v.); the second (and last) of the missiles on Nagasaki on the 9th. Thus did disasters accumulate and without hone of mitigaaccumulate and without hope of mitigation in any quarter. On 'he verge of sur-render, J. now found herself confronted render, J. now found herself confronted by a new and powerful enemy in Russia, which nation had not renewed the Neutrality Pact due to expire in April 1946 unless expressly renewed, and now declared war on J. to wipe out the humiliation of past defeat and to restore the status quo of nearly half a century ago. On Aug. 9 the Red Army invaded Manchuria. Meanwhile Allied aircraft, operating from enemalizations of the past of ating from speedily-organised runways on Okinawa, destroyed in one day sixty more J. ships. This was the end. Though J. still had a great fighter air force it was to a great extent a grounded force. The measure of Jap. losses was catastrophic. Thus in Now Gumea, of an army of originally 120,000 men only 12,000 survived. Between the date of the attack

17 heavy and 22 light cruisers, 7 aircraft carriers, 139 destroyers, and about the same number of submarines, 1 escort J.'s mercantile carriers and other craft marine had practically disappeared. On land, sea, and in the an J was shattered and was now in fact faced with the pins pect of speedy annihilation from further atomic bombs. Hence on Aug 14 f accepted the Allied demand for uncondi-tional surrender addressed from Potsdam atomic bombs

half-century J., as has been shown, had pursued an uninterrupted policy of expansion. Her imperialist c aims had dominated the mind of the ruling class which moulded the outlook of the Jappeople in a manner to which hist affords no parallel. On the basis of unquestion ing loyalty to the Imperial Throne, the whole nation was taught to face any hard s) ups which might be outsiled in following the national destiny the throne itself (see Porday (Overline) in the names was evalled from a temporal to a quasi of Mr. Churchill, President Trumin, and divine institution and like the Herrenvolk



Acu York I mes Photos

THE EMIFROR REPORTED IN FUBIL 1946

Gen. Chiang kai-shick. Anim forces be gan landing in J. on Aug. 29 and the in strument of unconditional surrender of J. Anici forces be was signed on board the Amer battleship Missouri in Tokyo Bay on hept 2. Within the ensuing days of the month the Jup forces in Luzon (Philippine) and through out the hW Pacific also suirendered while the surrender in S. E. Als was received by Adm Mountbatten on sept 2 Fhat of the Jap forces in (hma was signed at Nanking by Gen. Okamura on Sept. 9 For details of the war in the Far Sept. 9 For decails of the war in the far E., see Palific Campaigns of Fab. Lastern Front in Second Wolld War, Burma, Second World War Campaigns in Malaya, British, Jaanese Invasion of (1941-42), Navai Operations in Second World War

or the many, the servants or the librone down to the humblest private soldier were encouraged to regard themselves as a race put from the test of mankind, partici-pating in the God like characteristics of Emperor and nation Naturally the governing class was apprehensive lest the surrender should have a disastrous effect on public morale and they exhorted the merely temporary actions alamity as a merely temporary actions due to the atomic bomb but when they realised that popular loyalty was unimpaired they made no further attempt to minimise the implictions of surrender But, immune now from the risk of arrest, Prime Konove thrice Prime Minister of J., and after the surrender again one of the Lunporor's advisors, was the first import ant Jap since the surrender to declare to the world that both the China 'incident' Japan's new epoch.—The surrender of ant Jap suces the surrender to declare to J. marked the opening of a new epoch in the world that both the China 'incident' the list, of the Far E. For the preceding and the war with the Allies could have

been averted and that the Jap. militarists | been avertoo and that the Jap, militarists were principally guilty for both. Some of the oldtime leaders sought safety in suicide. Field-Marshal Sugiyama, chief of the Jap. General Staff up to Feb. 1944 and later minister of war in the Koiso Cabinet, committed suicide on Sept. 12, and Gen. Tojo tried to kill himself when Amer. officers went to arrest him. Gen. MacAsthur, supreme commender of the MacArthur, supreme commander of the macArthur, supreme commander of the allied forces of occupation, at once ordered the dissolution of the notorious R. Amur Society (sometimes called Black Dragon Society) originally founded to encourage the extension of the Jap. frontier to the Amur in Manchuria, the militarist secret organisation which for forty-five years, by assessination and other methods of coercion, ruled Jap. political life) and the arrest of its leaders. Among others arrested at this time was Adm. Shigetare Shimada, who, as navy minister, planned the attack on Peurl Harbour. Gen. Mac-Arthur found comparatively little diffiartial found comparatively neter that coulty in carrying out his instructions for the disarmament of J. and for the destruction of her war potential both in the moral and material sphere. The land forces were disarmed and disbanded and all disartial material. all aircraft were co ... cated. The United Nations (q.r.) agreed to scuttle all surviving Jap. war vessels, except about 40 destroyers and some coast defence vossels. After the dissolution of the Imperial General Headquarters and the arrest of many prominent individuals preparatory to their indictment as war oriminals came the entire control by orininals cannot be control of Allied authorities of the commercial and industrial life of J.; the break up of large estates among peasant proprietors; and the diversion of productive capacity into a programme to provide the people with the necessaries of life. All barriers to the gathering and discomination of news were removed, consorship by the Jap, authorities was forbidden, and the whole foundation of the elaborate system of thought control so effectively conducted for many years by the governing oligarchy was des-troyed. The speed of social reform and, especially, the abolition of the kempei of military security police, led to the reconstruction of the Jap, cabinet and Prince! Higashi-kuni, who had succeeded Suzuki as premier, gave place to Baron Shideham, whose administration gave an assurance that the political power of the military clique and of the bureacrats of the old

A year after the surrender the House of Representatives in Tokyo adopted by an stitution for J. superseding the Melji Constitution of 1889. This new Constitution indicated a wish to depart entirely from traditional beliefs wherever they were in conflict with the concepts of W.

Emperor, who became a symbol of the State; it renounced warfare as an instrument of public policy, and beamed the maintenance of any armed forces by which war could be waged. The adoption of this constitution was, perhaps, not surprising in view of the fact that defeat had destroyed the foundations of national life and left nothing in their place. All the old beliefs and traditions had gone. In place of an outburst of dangerous subversive activity by militarist leaders, such as had been confidently expected by experts in Far E. affairs, the Jap. people, now seemed engrossed in novel political developments on democratic lines; while the trials of war criminals, so far from investing leaders of the old type with the halo of hartyrdom, merely completed their dis-credit in popular estimation and the Diet itself pressed for a more thoroughgoing purge' of officials than any upon which the Allied Command insisted. The Jap. the Allied Command insisted. The Jap. people in fact desired neither revolution ner reaction: they were concerned principally with orderly development and the elections of April 1946, so far from representing a landslide in any direction, gave a small majority in the House to a coalition of Liberals and Progressives, the former stitute and Magnetic heirs of the former Seijukal and Minseito groups, whose popularity, however, was then steadily declining, while that of the Socialist Party was sharply rising. Women toted for the first time in Jap. hist. and there were thirty-eight women among the candidates elected. The voting age for men had been reduced from twenty-five to twenty. Experience throughout 1946 showed that Gen. MacArthur could rely upon Jap. co-operation in the task of reupon Jan, co-operation in the task of restoring normal social and economic conditions. His directives were issued to a 'linkon' dept., which was in effect the ministry of foreign affairs. Allied Military Gov. also existed, but its prin. functions the second of the conditions of the second of the tions were supervisory rather than actually administrative. Perhaps the greatest contrast with the Albed occupation of termany was that, instead of being split up into administrative zones, J. was administered as a whole by the single controlling authority, the Supreme Commander's Headquarters, working through the Jap. Gov. and, in the prove, through the Allied Military Gov., which, despite, its name, was in fact entirely staffed by Amers.

The new constitution came into effect on May 3, 1947. The first election for type had been broken, and that the aim of the House of Councillers, the new upper the administration was to inaugurate at House of the Diet replacing the old House regime in which policy would be determined by the will of the electorate.

for the Lower House on April 25. The Socialists gained more seats than any other single party, but the Communists polled only one per cont of the total popular vote. The House of thepresentatives of the Diet elected (Feb. 21, 1948) as premier, Hito-hi Ashida, Democratio party leader, to replace Setsu Katayama, a Socialist and a Christian, who had come were in connect with the concepts of W. a Socialist and a Constaint, who mad come democracy. Based largely upon Amer. into power in May, 1947 and whose Cabideas, the new constitution based the foundations of the State not upon divine (valuet (March 9, 1948) was made up of mandate, but upon the will of the elections of the lections of the legit Socialists, st. Democratic and two torate; it restricted the functions of the same year the eleven-nation Far E. Commission (the U.S.S.R. abstaining) ordered the early completion of disarmament. The future of the Spratly Islands occupied by J. on March 31, 1939 will be decided by the terms of the peace-treaty with J., but under the terms of the Yalta agreement J. has lost all her other colonial possessions and mandated is. No time-limit has been set for the allied occupation limit has been set for the allied occupation of J. but according to the Potsdam pro-clamation withdrawal would be made when the democratic objectives had been attained. Gen. MacArthur is publicly almost deified by the Jap. and any criticism there is is reserved for his system.

Industrial production in J. during the six months from April-Oct. 1948 rose from 50 per cent of 1948 rose from Through all the vicissitudes of total defeat, total demilitarisation and total occupation the Jap. succeeded in adhering to the three things essential to the future plans with which they are credited-the emperor system, the national structure of gov, and the close knit official bureauorstic machine. Under Gen. MacArthur, a 'model' new democratic constitution became law. A democratically elected Diet, fashioned partly on the But. Houses of Parliament and partly on the Amer. Congress, was actively functioning. A sweeping land reform was instituted: and trade unions were legalised after years of militaristic repression Ultra-nationalists and militarists were purged from public offices. But it was objected by some ob-servers that J.'s democratisation existed only on paper and that while, militarily, the occupation was smoothly successful, politically it achieved very little that would endure. Economically, J. was slowly recovering but still dependent upon America's hounty. Suclally, as an instrument for inspiring feudalistic Jap. to become attracted to Westerners and their ideas, the occupation might well transpire to have failed. In the material sense J co nave raised. In the material sense J was completely disarmed, a task in which the Brit commonwealth troops took an important part. Without Alicel permission and assistance, J. could not recreate her military machine for many But there was no corresponding mental disurmament or change of heart.

Despite the democratisation of Jap. political and social institutions, both Allied headquarters and the Jap. Gov. felt increasing concern over the activities of the Jap communist party, the leaders of which held their sixth ann. congress at the end of 1947. In his New Year message to the people, the former premier, Tetsu Katayama, pledged the Social Democratic party to a 'fight against Communism' to the last ditch. His Cabinet made known its intention to combat communist influence in labour unions so far as the Conence in lanour unions so ha as the constitution permits. But the strength of the communist party seemed uninpaired. The hist of the Jap. communist party Nippon kynsanio, as an independent party began in 1921, when the two men who now (1949) guide it. Kyufohi Tokuda and Sanzo Nosaka, attended the Far E. Communist Constance in Instates under the press. dency of Stalin. But their influence re-mained negligible until the party was for-mally reorganised in Dec. 1945. After that date, although claiming officially only 17,000 members (the unofficial figure was 100,000), the party became a powerful and aggressive minority group, supported by a large body of sympathisers and wielding through tireless activity an influence out of all proportion to its numbers. Their immediate aim was to win over the labour unions. Until Gen. MacArthur prohibited the general strike planned for Feb. 1, 1917, the National Congress of Ludwight Opening tipes with the aid of Industrial Organisations, with the aid of the Jap. Federation of Labour steadily endeavoured to stage muss demonstra-tions, strikes, and production control. This evidently indicated that the infiltration tactics of communists had met with some success. Success in the big industrial centres during the so-called 'October offensives' of 1946 and 1947 and the control acquired in certain rural areas, coupled also with the work of the Young Communist League (Seinen kyosin rennet), were all indicative of the party's existing and potential strength.

minist Langue (Schen kynsam reknes), were all indicative of the party's existing and potential strength.

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Manchukuo 1939-40, 1940; W. M. Ball, Japan—Enemy or Ally, 1948. Japanese (War Criminals) Trial (1946– 48). The International Military Tribunal for the Far E., under the presidency of Sir Wm. Webb, met early in 1947 to try the Jap. war leaders Hideki Tojo (q.v.) and his 24 co-detendants for conspiring to wage aggressive war for the purpose of securing military, naval, political, and economic domination of E. Asia and the Pacific and domination of E. Asia and the Pacific and Indian Oceans; for responsibility in 'conventional war crimes' (i.e., atrocities) practised by the Jap. army and navy; for breaches of the laws and customs of war, and on many other counts. The trial lasted 417 days and adjourned on April 16, 1948, after hearing the prosecution's final reply to the summing up of the defence, judgment being delivered on Nov. 12. There were 1191 witnesses, 72 prosecuting and 104 defending attorneys (25 Amer., 79 Jap.) and the cost of the trial reached sev. nillion dollars. The tribunal found all the defendants guilty and 7 of them sev. million dollars. The tribunal found all the defendants guilty and 7 of them were sentenced to death by hanging. Of the 7, all but Koki Hirota foreign minister (1933–36), were military men. These were Gens. Hideki Tolo, Kenji Dolhara, Seishiro Itagaki, Heitaro Kimura, Iwane Matsui, and Akira Muto. All the other accused were condemned to impresement for Hig event Moreon Shire. Dolhara, Seishiro Itagaki, Heltaro Kimura, Iwano Matsui, and Akira Muto. All the other accused were condemned to imprisonment for life, except Mamoru Shigennitsu, foreign minister (April 1945), who was sentenced to 7 years imprisonment, and Shigenori Togo, foreign minister under Tojo, sentenced to 20 years' imprisonment. Marquess Koichi Kido, Lord Keeper of the Privy Seal and other accused were condemined to imprisonment for life, except Mamoru Shigemitsu, foreign minister (April 1943-April 1945), who was sentenced to 7 years' imprisonment, and Shigenori Togo, foreign minister under Tojo, sentenced to 20 years' imprisonment. Marquess Koichi

one of the Jap. Emperor's closest advisers, was among those sentenced to life imprisonment. All the accused, except Matsui and Shigemitsu, were found guilty on the charge of conspiracy. Matsul was tound guilty on only one count—of 'doing nothing to abate the herors of wholesale massacres, individual nurders, rape, looting, and arson connitted by Jap. soldiers under his comeand in Nanking in 1937. Shigenitsu wa found innocent of conspiracy, but gullty if waging a war of aggression and of failing to investigate the augresion and of leading to investigate the question of the treatment of prisoners of war. Hirota was foul guilty of formu-lating a policy of expasion in E. Asia and S. areas, promoting a aggressive polic towards the Soviet Uson and supporting mulitary operations in hina. The India judge (Mr. Justice Pa entered a dissenting judgment recommnding a verdict of not guilty on all couts. The members not kning on an coust. The members for France and the Neterlands also entered a discerting judgmo. The President, expressing an opiniodiffering in certain ways from the mudty judgment, said that the crimes of the Jap, accused were far less heimous, v.ed, and extensive than those of the Oc accused at Aironberg. He expatiateon the implications berg. He expatiation the implications of the Jap. Empero.responsibility. The authority of the Emror (he stated) was proved beyond queon when he ended the war on Aug. 14, 45. The outstanding part played by a Emperor in starting and onding thear was the subject of evidence led byte prosecution, yet the prosecution mat clear that he would not be indicted. Bhought there best not be indicted. Bhought that a Brit. not be indicted. Mought that a Brit. court would, in pass sentence, not forget that 'the lea in crime,' though available for trial, d been granted immunity and if, in h a case, the court must by law imposap. punishment, the prerogative of mer would probably be preparative of the would probably be exercised to save? lives of the con-denned. On the arge of committing atrocities, the tribi found that torture, murder, rape, ander crueities of the most inhuman antrbarous character were freely practi by the Jap. army and navy. Atroc were committed in all theatres of wan a scale to vast and on so common aftern that the only conclusion possible that those atroci-ties were either thy ordered or wilfully permitted by Jap. gov. or by the leaders of the arriorces. The death leaders of the artforces. The death rate among prise in Jap, hands was 27 per cent as agi 4 per cent of allied prisoners taken the Ger. and It. armies. Capturdmen were murdered in the hope that 'fate would discourage the allies froiding J. At Balikpapan (Borneo), hire white pop. was murdered becaue oil wells were not surrendered intaSome were killed by having their argid legs chopped off

not be 'obsestd by mistaken ideas of humanitarianism, to all protests from the alies over the treatment of prisoners the Jap gov retuned only lying or evasive answers. When the end of the war was in sight a determined effort was made by the Jap give to assist its eliminals in avoiding punisment and orders were in avoiding punishment and orders were issued for the bulning of all documents and permission given for persons who had maltreated prisodies to fice without trice. The proceedings of the tribunul covering the actives of ocarly a score of different (abinutageous the unvioleding determination withwhich the rulers of J endeavoured to suguard that oligarchic system which the termed the national system which the termed the national polity it was cleat to them that even if they were defeat! the old J would be able to emerge again provided that the nutional polity we not destroyed—for them the privat of the national polity was the maintenance of ic unperril system

The seven Jup Ader, who were con-demned to death The trial were hanged 23 Allout fojo appealed on Dec against their conviou and sentence to the Supreme Cou Gen MacArthur the supreme could in meating had stayed the entropy for ling the appeals. The supre court considered that it could not be the appeals nor interfere in the execton of the sentences the ground of the decision being that the Tokyo Iribunus not an Amer

court

court
Japanning, art of mishing in colours
the surfaces of the wood etc the
sunch being did did hardened on in
toves on het chunk. The process is
o called from an intron of the calc
brated lacquiring offpin which have
etc., is far more brint and beautiful
as well as durable in ordinary jay in
work. The pio t chion which of the
work is black, jay which consists of
asphaltum mixel wigum turpenting
and lineed oil system its of the mix. aspiration in section is and inseed of system to of the first ture being apple I is allowed to disseparately afterwarding rubbed down

ture being apilic! sillowed to disseparately afterwarding rubbed down with powdered jumpione and then polished that it is lating, a brilliant black is shown Jone! works it usually einster et al. A conster et al

double white, red, dange flowers Grown as an ornamental plant

Jaques-Dalcroze, Emile (1865), Austrian composer, b in Vicinia Studied under Ruchs and Brucknet in Vienna, and under Ruchs in Paris Prof of music, Geneva Conservatoite, 1992, where he evolved his educational method, the Cymmustique rythinique, a system of musical and gymnastic training which has won world wide same Institutions for tacking his system have been opened at Heliciau, near line den. in Geneva this hadquarters). Intsden, in Genova this headquarters), I tils, and I ondon He has written many delightful and original songs and compositions full of melody His operas include sautho, Jumeaux de Bergams bonhomme Judy and June his songs are collected in Chansons populaires and in Chansons et Lendes pour enfants - He has witten Spirenns (1912) and La Musique et nous (1115)

Jargoon, name applied to cert un varieties of zuron which can be cut as gems, but no not of the reddish colour of the Some Is no colouriess and jac int h oth is ire timed with given yellow of ied the histre being very near to that of a

di unond

730

drinond

Jarnao, tr in Wir ince dest Charente
on ter bothel Charente 7 m/s for Cana Brindy wim and wing
et ince minimictured I only Prince
dent was killed here in the victory
of the duke of Anjon over the Hagnenots
(March 13 136) Pop 1000

Jarnach, Philip (15)2) omposer of
equivalent ince both Norsy France
en is both culpier I ducated at
en is both musiculater Risier for princ
en is both the culpier I ducated at
en is both the culpier in the succession of the culpier in the culpier

to the intermediate for the transfer of the transfer of truscology but to be self-trught. Taught it the Zurl conservation 1318-21 and later, in fellin Disciple of Busoni and cost ichian rather than national. Has t and violin including B inter limes
t and violin including B inter limes
lying to a lownamen and Prelute l Ir nutheus

Jirnefelt, Armas (b. 186)) a Finnish 11 oct born at Vipuri (Viborg) 51 thed under Busom and Massenot in Bit a and Puis respectively Became on for of the opera and head of the con civitone it Vilpuri and then it Helsinki,

i becoming court conductor in Stock His written orchestral and choral

Jaro, a tn of the prov of floilo Phil hijime is t m NW of the cap floilo it has a lize tiade in sugar and agric ir live. Intil 1903 it was put of the tn. ir lice Untilized

it linds. I op \$1,000
Jaromer, or Jaromierz, the in Bohemia
(*) hedovskin, on the R kibe 68 m.
I of Prague There are manufs of
u and jute Pop 3,000
Jaroslaw, the in Galicia Poland, on the
R san 60 m N k of Lyon and about
20 m N of Preemist with which it is con
nected by rail. It has manufs of confectionery cloth, pottery and brandy
Pop 2,000 Pop 25,000

Jarrah, or / ucalyptus marginata, also known as the mahogany guntice. It is a species of Myrtaces indigenous to S W. Australia, and is much valued on account

of its wood, which is used in building and unemployment in J with three quarters furniture making

Jarrow, industrial to and municipal bor in the co of Durham, England, situ ated on the Tyne about 6 m 17 of New castle and 4 m 5 F of S Shields 5t Paul's church, once the chuich of the monastery associated with Bede, contains part of the original building, and nearby are some monastic rules. The tu is exentially part of industrial Tyneside and the present industria include sectional steel rolling, steel casting, special refined non manuf, ship reputing, oil installa tion, slag crushing and preparation for road work, patent wagon axicbox manuf, light electical accessory minuf, bakers' oven and ancillary equipment production metal box manuf and general engineering products

Although it probably had a Rom or cupation, J defives its man efrom the Saxon word (1314) or (viue meaning a marsh or fen the mush bring J slake (corruption for J s Lake) an estuary of the Type on the F side of the m. J how ever, is much bett i known is the home of the Venerable lede who entered the monastery founded by 5t Penedict Biscop (q t) t J. It consecration of the Abbev in v b ost and remained there until his death in 73 — The Coder Initia until his death in 73 The Coder time times, one of the fine to proof the suptures was written by I cde at J. I cained also in the arts in I sciences, Bede itso taught the art of glass in using and non-jounding. Although despoiled by the Dines and oth rs, parts of the monastery still stand in ruins idjacent to St. Paul's Church. Little is known of L from the time of Bede until the unicteenth cen. vard the first practicable non serew col-lier was funched (1812) and numerous washing of all clesses were constructed the first numelad with rolled plates, in and in 171 there ap eared an astound my forgon of Jutland in 1916. The Palmer Works in Jashpur, this state of the Central Province of Jutland in 1916. The Palmer Works in Judge 1 Ju of Jutland in 1916. The Palmer Works grew from the ships ad commenced in 1852 to a shipbuilding and from works to be ships and employing up to 10,000 people. No fower than 900 ships of a total displacement of 4,000 000 tons were launched from J. until 1933 when the works were closed. In 1934 the ward was sold subject to a restrictive covenant against shipbuilding therein for a period of 40 years, the object being to eliminate wasteful competition. But during the Second World War this covenant was waived in the national interest and ship repairing again commenced in the yard. Second World War this covenant was an enclosed in the national interest and ship repairing again commenced in the yard The decade 1930 to 1910 was one of great whose real name was Jacques Boé His

of the working pop unemployed, and strenuous efforts were made to bring back industry to the tn Eventually J. was in cluded first in the Special Area of Durham and Lyneside, and the site of the Palinci Works was purchased by the Special Arcis Commissioner and new industries becan to be set up on the rite, particularly through the efforts of Su John Jarvis M l , who turned his attention to the development of furniture-making, ship breaking, manuf of hot and cold rolled solid drawn tubing, the production of steel and illoveasting, and general engineering in 146 the Lyne Tunnel Bill was passed to authorise the construction of a tunnel er tunnels under the fivne between J and Willsend Three tunnels are to be con structed—a 1230 ft long pedestrian tun-nel with a two tunnel alongside for yearts and a vehicular tunnel quite si a de from the other two. I we watton be, in in 1947 and the N. (Howdon) and S. (Tarow) workings were joined in 1949. In the 1911-18 War the Lahmer Works wac bombed in a lept chin raid with some of lite. In the second World Wat the bor was bombed on sev occasions with a death roll of \$...00 houses being troved Archevelopment plan for the cld r part of the cld velopment plan for the cld r part of the the was adopted by the concil in 1941 Pop 26,800

Jasher (i. V. Jashar), Book of, or Book of the Upright, one of the most important of the lost works of the Jevs. It is twice

me cain the emonical books of the O I . in I it is noteworthy that each quotation is poetical in orm In Joshua & 13, the pissing telling how Joshua Commanded he sun to stind still over (sibeon and the thuch I fittle is known or recent the control of Bede until the nuncteenth century. In 1803 a collect was started monor and of J so it of J so by Charles Mark Palmer (affectwards Su (
by Palmer and thist blay or of the loar) and
his brother George in 18-2. In this ship
possess the first practicable monseress collection of the post solomome period
production of the post solomome period
product I vodus, Judges, Samuel, etc. During the later Middle Ages three Jewish works and in 1751 there ap cared an astounding forgery purporting to be a trans of it into ling by Meuin

Jashpur, trib state of the Central Prov India In the bed of the R Ib the most

first vol. of poems, called Papillotos (Curl Papers), was pub. in 1825, containing some verse in Fr., but mostly in the Provencel 'patois.' These 'patois' poems are generally in the form of short epic narratives, both grave and gay, dealing with familiar scenes of the peasant-life in which he took part, and marked by spontaneity and simple grace of diction. J. is now generally considered the direct fore-runner of Mistral, and the **Ptibrige*. Four successive vols. of the **Papillotes* were pub. successive vols. of the Papillolos were pubduring his life-time and contained the samous poems (Charivari'; 'My Recolections'; 'Martha the Simple'; 'The Twin Brothers'; 'The Blind Girl of Castel-Cuillé' (trans. into Eng. by Longfellow, and set to music by Coleridge-Taylor, 1901); and 'Françouetto' (trans. into Eng. by J. D. Craig in his Poets and Poetry of the South of France, 1866). See L. Rabam, Jasmin, as Vie et ses Gueres, 1867; F. De Montrond, Jasmin Poete (2nd ed.), 1876; J. Andrien, Jasmin et sim Guerr, 1881; C. A. Sainte-Beuvo, Portraits contimporains, 1870; J. Smiles, Jasmin, Barber, Poet, Philianthropist, 1891; X. Cardaillac, Propos Gascans; Jasmin, 1898; and P. Marieton, Jacques Jasmin, 1898. Jasmin, 1898.

Jasmine, or Jessamine, term applied to the various species of Jasminum, a genus of Oleacee. There are between one and two hundred of these shrub-, most of which bear sweet-scented flowers tollowed by a fruit which is vertically divided in two. J. officinale, the common J., grows in Europe and Asia. Besides the true J. there are many very different plants to which the name is given. Thus Gardenia forida, a species of Rubiacere, is known as Cape J.; Gelsemum semperarens, a species of Loganiacee, is the Carolina J.; Plumeria rubra, a species of Apocynacee, is the jasmine-tree; Calotropis process, an asclepiadaceous plant, is the Fr. J.

Jason: In Gk. mythology, the leader of the Argonauts, was a son of Æson, king of loicus. His half-brother, Pelias, drove him from the kingdom, and he was edu-cated by the Centaur Chiron. Pelias was warned by oracle against the man with one sandal. When J. came to claim his kingdom, he entered the mkt.-place with one sandal, and Polias, recognising the omen, sent him in search of the golden fleece. J., by the help of Medea, secured the fleece and returned with her in the Argo. Medea, pretending to restore youth to Pellas, per-buaded his daughters to dismember him and place the member in a cauldron.

J. and Medea were expelled. Finally J. J. and Medea were expelled. Finally J. forsook Medea for Glauce, and Medea in revenge slew the new bride and her own children by J. For a graceful popular ac-count, see Charles Kingsley's Heroes ('The Argonauta').

Jason, name of the origin in common use among the Jews. J. was a favourite equi-valent of Heb. Joshua. There are sev. J.'s mentioned in the Apocrypha, and one in the N.T.: (1) Of Cyrene, a Hellenistic Jew who probably lived in the second half of the second century B.C., and was the author of a hist. of the times of the Maccabees down to the victory over Nicanor

(175-161). (2) The second son of Simon II. By means of a bribe to Antiochus Epiphanes he managed to usurp the high priesthood of his brother, Onias III. (Antioch II.). Another bribe enabled him to set up a gymnasium in Jerusalem to him to set up a gymnasium in Jorusalem to enrol the inhabs. of Jerusalem as 'citizens of Antioch,' He subsequently died in exile (see 2 Macc. iv., v.). (3) The son of Eleazer, sent by Judas to Rome (1 Macc. viii. 17). He is probably the J. who is mentioned as the father of Antipater (1 Macc. xii. 16). (4) Of Thessalonica, was the host of St. Paul in that city and his surety with the magistrates (Acts xvii. 1) and according to tradition history. 1), and, according to tradition, bishop of Tarsus. He may be identical with the J. of Roms. xvi. 21, Paul's 'kinsman.'

Jaspar, Henri (1870–1939), Belgian statesman and premier from 1926–31. A member of the Catholic Party he was intimately associated with the post-war reconstruction of Belgium as minister of economic affairs. Subsequently became toreign minister and their Premier. In 1929 he became permanent president of the Reparations Commission.

Jasper, crypto-crystalline form of silica, usually opaque, through contained argillaceous matter. It is related to flint, chert, and chalcodony, and is found in veins and cavities in igneous rocks from which it is derived by decomposition. Through the admixture of exides and silicates of iron its colours vary from red, brown, yellow, to green. The jasper of antiquity was apparently a brilliant green translucent form, and the name was evidently applied to forms of chalcedony. The ribbon J. of Siberia has well-marked red and green stripes. Egyptian usually occurs in brown nodules in the Nile valley and Libyan desert. A rather rare form of the mineral is termed porcelain J., and it is distinguished by minute holes and a multiplicity of cracks; it has evidently been so altered by being baked in silu.

Jasper Park, largest national park in the world, situated in N. Alberta, Canada, world, structed in N. Alberta, Canada, has an area of 4,521 sq. in. It was estab, in 1907. It is connected by road with Bant' national park over the Columbia Icetied Highway and glaciers come right down alongside. The park is reached from Edmonton by train on the main line of the Canadian National Railways. A curious port in relation to the hist of the curious point in relation to the hist, of the park is that it was named after a yellowheaded if otherwise obscure young fur-

headed II otherwise customs young americal from Missouri.

Jaspers, Karl (b. 1863), Ger. philosopher and p-ychiatrist, b. at Oldenburg, son of Karl J. a bank director. He was educated at the Humanistisches Gymnasium, Oldenburg. He became a Privatdozent 1012 and prof. there in Oldenburg. He became a Privatdozent at Heidelberg in 1913 and prof. there in 1916. He has been Prof. of philosophy Basel Univ. since 1948. During the Second World War J. never made the slightest concession to the Nazis and courageously upheld the great traditions of W. civilisation, symbolised for him by such numes as tloothe, Jacob Burckhardt, Kierkeguard and Nietzscho. The address which Ludirand on the occasion of his which J. delivered on the occasion of his

being awarded the Goethe Prize of the Group under Gen. Malmovsky attacked city of Frankfurt (Aug. 1947) indicates his unequivocal search for truth and his profound understanding of the spiritual and nonderstanding of the spiritual and normal needs of our age. This is exempled, with a reverve line in the wooded inoral needs of our ago. This is exemplified in his book Von der Wahrheit. As an existentialist philosopher he shows much more balanced and responsible thought than Heldegger and sev. other existentialist philosophers. His pub. works include Psychopathologic (1913, 1946), Psychologue der Wellanschauung (1919, 1926), Philosophie (1942), and Von der Wahrheit, 1948. See E. L. Allon, The

heights behind J. But the impetus of the Russian attack carried all before it, and though there was street fighting after the Russians entered the tn. it fell to them on Aug. 22 after a three day battle which broke the Axis line to a width of 75 m and a depth of nearly 40 m. between the Sereth and Pruth Pop. 109,000.

Jastrowie, (Ger. Jastrow), tn. in Pol and,



Canadium Government

MALIGNE LAKE, JASPER NATIONAL PARK

Self and its Hazards

the Thought of Karl Jaspers, 1949.

Jassy (last, Yassy), chief th. of Prut,
Rumania, 5 m. W. of the R. Pruth and the
Russian frontier. It was nearly destroyed
by fire in 1822, but was rebuilt on a
modern plan. It is the seat of the Gk. Orthodox metropolitan of Moldavia and of a Rom. Catholic archbishop, and has a of a Rom. Catholic archbishop, and has a univ. (founded 1864). J. his a trade in petroleum, salt, metals, timber, coreal-fruit, wine, and cattle. Here was concluded the peace between Turkey and Russia in 1792. From 1564 to 18-9 J. was the cap. of Moldavia. In the First World War, when much of Rumania fell to the Central Powers the Rumanian Court re-Central Powers, the Rumanian Court remained at J. throughout the period of these reverses. In the Second World War, in the course of the Russian offensive

An Introduction to | 52 m. W N.W. of Bromberg (Bidgos/cz). The chief industries are spinning and weaving. Pop. 5900

Jaszapati, tn. of the co. Jasz, Hungary, 52 m. E. of Budape at. The chief industries are agriculture and horse-breeding. Pop 11,000

Jaszbereny, tn. of the co. Jasz, Hungary, 10 m. E. of Budapest. It has manufe. of wine and cloth. Pop. 26,500.

Jasz-Nagykun-Szolnok, co. in Hungary, watered by the Ti-za (Theiss). The chief tn. is Szolnok. Area 2074 sq. m. Pop (co) 251,000

Jataka, name used to designate the legends was a recount the 550 incarnations of Buddha. These fables are widely disseminated throughout India, and occur these reverses. In the Second World in various disguises in the folklores of War, in the course of the Russian offensive nearly all European countries. See V. against Ger and Rumanian forces launched on Aug. 20, 1944, the second Ukranian (trans.) The Jataka, with its Commentary,

Jath has a pop. of 8000.

Jativa (anct. Sætabis), city, prov. of Valencia, Spain. In Rom. times it was famous for its linen. It is picturesquely stuated on the R. Albalda. Its chief product are fruit, rice, oil, and wine. Pop. 12.767.

Jatropha, genus of Euphorbiacore, occurs in tropical and sub-tropical countries, but is found most frequently in America. There are seventy species in all sev. of which yield a valuable oil. J. podagrica is a curious species with a thick swollen stem, and is often cultivated in

greenhouses.

Jats, people of N.W. India, and Pakistan. They form a considerable portion of the pop. of E. Puniab, Rajputana, and the adjacent dists, of the United Provs. Two states of Rajputana—ilharatpur and Dholpur—are under Jat rulers. Hindu Dholpur—are under lat rulers. Hindu legends seem to point to a pre-historic occupation of the Indus valley by this people. The J. are mainly agriculturists and cattle breeders. They are very dark in colour, and have regular features. religion they mostly follow the Sikh or Mohammedan faith.

Jauer (Polish Jawor), tn. of S.W. Poland 35 m. W. of Wrocław. Before the Second World War it produced sau-ages and grain and manufactured machinery, car-

grain and manufactured micinnery, car-pets, leather, etc. There are interesting old churches and a palace of the former princes of J. Pop. 12,760. Jauja, or Atanjauja, tn. on the riv. of the same name, in the dept. of Junin, Pern, 115 m. N.E. of Lings, raiver mines occur

in the prov.

the prov. Pop. 3100. Jaumave, tn. and com. in the prov. of Tamanlipas, Mexico, about 30 m. S.W. of Crudad Victoria. Large quantities of ixtle fibre are grown in the J. valley. Pop. 10,000.

Jaundice, symptom of disorders of the system, rather than a disease, and is caused by the presence of the colouring matter of lule in the blood. It causes the skin and the conjunctive of the cyo to become yellow hence it- name, from Fr. jame, yellow. The utine becomes very dark, varying from sation to porter in colour, and the frees become of a drab or slate-grey hue. Sometimes in addition to this there is extreme itching of the skin. J. may be caused in two ways. (1) the most common being when the bile duct is obstructed, and (2) when there is no obstruction. The first is known as hepatogenous, and the second as hematogenous J. In the first the billary mechanism, and in the second the blood, is at fault. The first may be caused by the presence of gall-stones in the bile duct (see CALCULUS), by catarrh and swelling of the lining membrane or of the duodenum or by the pressure of growths of neigh-

1877-91; and Buildhist Birth Stories, 1880; E. B. Cowell, The Jataka, 1895; accumulations of faces in the bowels. J. J. Meyer, Twice Told Tales, 1903.

Jath, India, native state in the Deccan div. of Bombay. With the small state of Daphiapur, it forms the Bijapur agency, covering an area of 980 sq. m. The prin. industries are agriculture and cattle-rearing. Pop. 75,000. The tn. of Leth bees non of 8000. absorbed in the blood, and so the coloration arises. The second class of J. may be caused by severe mental emotions, like anger and fright, by certain snake and other poisons, and by certain diseases like pyenia, typhus fover, and in particular by yellow fever. The cause of yellow two too a view rates present all the property of the cause of yellow fever. iever is a virus whose presence allows the bile pigments to continue to circulate in thle pigments to continue to circulate in the blood. In cases of obstruction by gall-stones, catarrhal J., and by pressure of the pregnant uterus or of fuces in the bowel, or congestion of the liver, recovery is comparatively certain. It is more serious when resulting from circhosis of the liver and tumour of the liver; and when it results from acute diseases or from poisoning, it is a very serious symp-

Weil's disease. J. is a common sign of this spirochietal infection. The spirochacks are excreted in the urine of rats and penetrate the skin of workers in sewers and people in similar occupations.

Malapant jaundree.—A rare form of non-obstructive J. which accompanies yellow atrophy of the liver, in which the liver shruks greatly and the liver coll desint grate rapidly, resulting in a very speedy death.

speed death.

Jaunpur, cap. of a dist, in the United
Prov., India, and is situated on the R.
Gunti. It was originally the cap. of a
Muslim kingdom, and contains certain
mosques, the remains of the fort, and other
similar structures. The riv. here is crossed by a bridge built in the sixteenth century. Pop. 330,000.

Jauréguiherry, Jean Bernard (1915-87), Fr. admiral who served with distinction in the Franco-Ger. War. He was 6. at Busonne, entered the navy (1831), and subsequently served in the Grimea and in China. He was minister of marine from 1879-80, and from 1882-83.

1879-80, and from 1882-83.

Jauregui y Aguilar, Juan de, Chevalier de Calatrava (c. 1570 c. 1619), sp. poet and painter. He visited Rome (1607), and produced a verse trains of Tusso's .Im nta. His Rimas appeared 1618, the Drourso poetico (1623), assailing the Gongoristic movement, yet Gongora's style influenced his Orfeo (1621), and especially his trains, of Lucan's epic, Faisalia (1648). See Q. Ticknor, History of Spanish Liberature (1819); F. Quilliet, Dr. des pointres españols, 1816: L. de of Spanish Literature (1849); r. wunner, Drd. des peintres españols, 1816; L. do Sedano, Parnaso español, l., 1768-78; M. Rivademeyra (pub.) Biblioteca de aulores españols, xili. 1849.
Jaurès, Jean Léon (1859-1914), Fr. socialist statosman and man of letters, b.

at Castres in the dept. of Tarn. In 1883 he was appointed to the chair of philo-sophy at the univ. of Toulouse; but he resigned his professorship on his election in 1885 to the Chamber of Deputies. He embraced the cause of the employees in the Carmanx strike. He became the recognised Socialist leader in the Chamber in 1893, and was one of the chief cham-pions of Dreyfus. In 1902 J. became vice-president of the Chamber. ills chief work is the Histoire Socialiste 1797-1900, pub in 1901. He was in England the best known of tr socialists. On July 16, 1914, he proposed the resolution carried at a socialist conference in Paris, in favour of a general strike to prevent war. He was assassinated in the Ruo du Croissant by shooting July 31, on account of his efforts for peace. See C. Rappoport Jean Janes. PHomme le Pensur le Seculiste 1915. L. Lévy Bruhl Quelques Pages sur Jean Janes. 1921 and Jues by G. Lévy Bruhl 1924, and J. Fackson 1943.

Leve one of the large as of the Duty be

Java one of the larger is of the Dutch F Indies in that portion of the Malay Archipelago known as the Sunda Is—Its extreme length is about 6.0 m—breadth 12) m ind it covers in mer (with Madura a smill soft the NF coast) of 51 030 sq m. I is washed on the N by the Sea of J on the L by the Strait of Italian in the N by the Strait b) 130 sq m I is washed on the N by the Start of Bali on the S by the Indian Ocean and on the W by Sund's Start I he cost line is little developed and from end to end of the I there is a mt chuncultocaming kendang Alluvial plums extend along the N cost ind towards the S lava falls steeply towards the sci Many of the N la S in the into an still active, and the highly role was described. active and the highly volcini character active and the highly vok in character of the country helps to explain the great feithlits of the soil. In 1) there was severe cruption of the Nerpl vokean soint 700 persons being hill 1 Nuncous rivs flow from the N aid Saltes affording supplies to artificial water ourses and carrying feithlits with them, only two however are navigable for large boats. The claim is grather host and rather that The climate is rather het in a multi aths on the corst but salubrious and pleasant in the hills the more cleated regions being remarkably healths. The days are neing remarkably action. In casys are as a rule hot, but mediated by land an issen breezes the runs seison lists from Nov to March. In large of Is vege tation follows that of its temp and is one of astonishing fertility. The court is fringed with coconnt trees and the ground behind them to the foot of the mt chain is well cultivated. There are large rice fields and ugar plantations and cotton cinnamon and tobacco are freely grown and many parts of the coast are fringed with mangrove Firther inland are found palms tree feins and serve pines In the forest region the trees are richly clad with ferns and en rimons fung, an l consist mainly of teak. The most noted Javanese plant is the chettik or upas th famed poson tree. Many of the loftlest trees are crowned with blossoms, and shrubs and herbicous plants give brilliant effects at the edge of the forest and the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the protest and and the sides of the sides of the protest and the sides of the highways. drons, magnonar myries, orenns, pit cher plants etc abound and it is estimated that the total number of species of Javanese plants is over 5000 J is not so rich in fauna—tipers, rhinoceros decrand wild swine are the chief of the quad rupeds sev species of crocodiles and see pents are found, and of buds there are colles a few consolious for their plurage.

counties numbers. The pop of J is almost entirely agric and is distributed over the is in vila each governed by a native chief of its own choosing. Scattered all over the is are many agric estates chiefly owned by Furope in and Chin a lartic companies but the greater part of the soil of J belongs to and is cultivated by the natives. Here forms the staple to do of the natives and is rusted in large quantities, coffice and snaar also fum staples of their Collier native culting are male coisses and cotton in many natures, pepp r to bacco tea cotonia and colling in the likelyse cultivation in which virungs as I ho native consist of the lawness pipper the



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JAVA A PADIA LIFID

with mangrove Firther inland are found palms tree feins ind serve pines. In the forest rigino the trees are rights (lad with ferns and entermous fungs, and consist mainly of teak. The most noted Javanese plant is the cheftlik or upas the famed poison tree. Many of the loftlest trees are crowned with blossoms, and shrubs and herbiceous plants give buil liant effects at the edge of the forest and shrubs and herbiceous plants give buil liant effects at the edge of the forest and illant effects at the edge of the forest and the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the sides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the solution of the lides of the highways. Rhododen drons, magnolias myrtles, orchids, pit the solution of the lides of the lighways. Rhododen drons, magnolias myrtles, orchids, pit the solution of the long lank in the New Mith brown or black eyes and the New Mith brown or black eyes and the same in the course him to the course him the solution of the lides of the lighways. Thought him with brown or black eyes and the same in the course him the solution of the lides of the lides

was installed to discuss the budget and I advise the gov. of which in 1925 the Dutch R. Indies were granted a measure. The 'Volksraad' and the governor-general share the legislative powers between them. in 1940, when Holland was overrun by the Germans, the lutch E. Indies became the seat of the Dutch Govt. in conjunction with representatives in London, and it was for J. and the other colonial possessions that the Dutch carried on the war against Japan for a short time; but eventually the Jap, gained complete control of all the Dutch E. Indies. The natives are under native tribunals, superintended by Europeans in certain instances, schools for primary instruction have been estab. at Batavia and other prin. tns. There are also public secondary schools in connection with the primary schools, and High Schools for Technology, Law, and Medicine.

Mohammedanism is now the prevailing religion in J.; but before its introduction at the end of the fourteenth contury Brahmanism and Buddhism had prevailed. Among the Buddhistic ruins is the famous temple ruin of Boro-Budur built about A.D. 750. The art of J. was chiefly developed under Hindu influence and the early drama strongly suggests Indian origin. J. exports chiefly sugar, coffee, tea, rubber, quinine, and taploca, mattan and petroleum products. Rice is grown extensively but does not suffice for local consumption. In 1937, the total exports from J. and Madura were valued at over 1,000,000,000 guilders, Imports were valued at half that figure. There was before the Second World War, a weekly mail service by luxurious Dutch boats to and from Holland; and regular steamship connection with Singapore and other neighbouring ports, as well as with Australia, China, Japan, and Brit. India. The railway system of J. is highly developed and covers practically the whole of the is. There were regular air services between Reteries. Among the Buddhistic ruins is the famous of the is. There were regular air services between Batavia, Sumarang, and Sura-baya, and also between Batavia and Medan.

Medan.

History during and after the Second World War.—Following the Jap. naval victory of Feb. 27, 1942, in the battle of the J. Sea, J. was occupied by the Japs. Palembang was raided by allied aircraft at times but otherwise J. was not the scene of any fighting in the war. After the Jap, surrender in Aug. 1915 the Dutch, because to the process to having no ships or troops to spare were unable to resume possession of the is. and the internal situation was complicated by a widespread Indonesian revolt against the small allied forces which tried to enter on behalf of the Dutch. Before the war there was a Nationalist movement in the by the W. Powers. During the war the Indonesian Nationalist leaders took office under the Japs. in various Jap. sponsored organisations. Late in 1944 Japan made a formal promise of independence to the Indonesian nationalist leader, Dr. Sockarno and, after the Jap. surrender,

republic. When the Japs., saw that they were to lose the war they gave every encouragement to the independent movement in order to complicate the position for the ailies, and to that end they gave much of their military equipment to the Indonesians. The latter, seeing the diffi-culties of the allies, made the most of their opportunities and by the time the first allied troops were ashore, they had gathered nearly all the reins of power into their hands, besides drawing up a republican constitution with Sockarno as President. In the meanting the Dutch were dependent on the Brit. The original purpose of the despatch of Brit. forces to J. was to arrange on behalf of the United Nations for the disarming of the large Jap. garrison and for the safety of the Dutch and Eurasian prisoners of war and in-terness. But these tasks were greatly complicated by the action of the Japs. in handing over stores of arms to the Indo-nesian' youth' movements and encouraging Indonesian nationalists to occupy the administrative posts which they them-selves had to relinquish on their surrender. Thus inevitably the Brit. torces became involved in local politics, with the un-enviable task of trying to reconcile two incompatible responsibilities—respect for the position of their Dutch allies and respect for a nationalist movement of the respect for a nationalist movement of the very type for which Britain was making provision by the announcement of a new policy in India, Burma and Malaya, Queen Wilhelmina's policy, outlined in Dec. 1942, provided for an imperial conference after the war, to settle the future relationship between the component parts of the Dutch empire; but the Netherlands gov. failed to appapelate the hold which the Nationalist movement had gained in J. and the initial negotiations were pre-J. and the initial negotiations were pre-judiced by the reluctance of the Hague to deal with men rather hastly discounted as 'quisings.' By the time a new Indonesian cabinet had been formed from men who had a good record of resistance to the Japs. and the Dutch proposals were advanced in a more conciliatory spirit, the temper of the Nationalist leaders had hardened and, by the late autumn of 1945, there was but little hope of inducing the main parties to come to the conference table.

Fighting in Surabaya between Brit. troops—chiefly Mahratta and Rajputana infantry—commanded by Brig. A. W. F. Mallaby, and the Indonesian extremists Mallaby, and the Indonesian extremists broke out at the end of October, following the announcement by allied leaflets that a military gov. was to be instituted. This outbreak postponed indefinitely the political talks which had been arranged to take place in Batavia between Dr. van Mook and the Nationalist leaders. Towards the end of Nov. there were two divs. of Brit. troops in J. and their difficulties arose less from the resistance of the extremists, which was both unskilful and fanatic, than from a desire to spare Indonesian lives and to avoid the development of a racial war. Brig. development of a racial war. Brig. Mallaby the Brit. commander in Surabaya Dr. Soekarno publicly announced that Mallaby the Brit. commander in Surabaya Indonesia was a sovereign independent was murdered on Oct. 30 when discussing

with local Indonesian leaders the details | realm. cease-fire agreement. Gen. or a cease-ine agreement. Gen. S. Philip Christison, the allied commander in the Netherlands E. Indies, then broadcast a warning that unless the Indonesians who had broken the truce surrendered be would bring the whole weight of his forces against them. Brit. destroyers arrived at Surabaya, in and around which tn. there were some 15,000 armed Indonesians, in order to evacuate Dutch women and children. Soekarno expressed regret at the murder of Brig. Mallaby but the murder by extremists over whom he had shown he had but slight control was the worst set back yet suffered by the inde-pendence movement. Troops of the 5th Indian Div. then arrived in force in J. from Singapore and some battalions, with

armoured units, were posted to Surabaya.

The political situation was further complicated at this time by the announcement from the Hague that Dr. van Mook, the Dutch political and administrative head in J., was negotiating with Soekarno against the instructions of the Netherlands Gov. But on Nov. 6 van Mook announced the main points of a declaration of policy, making provision for an Indonesian Com., wealth. But with war in progress and the Dutch thinking in terms of war, such a declaration which might have been effective earlier, now signified next to nothing and indeed Sockarno, who now leared trouble it the Dutch regained control, rejected the local gov.'s terms. Many Indonesians were killed in tanatical charges against Brit. tanks in Surabaya manned by Mahratta troops. Indonesian-manned Jap. tanks fired at the 5th Indian divisional headquarters but were soon silenced. Various Indonesian headhead. quarters were bombed and demolished. There was now evidently disunity among the Indonesians: for a new group of Nationalist leaders, headed by Sjahrir and Amu Sjarifudin announced that they would meet Brit. but not Dutch represen-tatives. But fighting continued in Sura-baya, Semarang, and other places. Rocket fring aircraft of the R.A.F. put out of action the wireless stations at Surakart. and Jokjakarta, which had been used for and Johnston, when have been deed used to violent propaganda against the Dutch, the Brit., and the more moderate Indonesians. Indonesian terrorists attacked a camp for interned persons at Ambarawa killing women and children. There was there fighting (Nov. 26) near Ambarawa between Gurkhas and Indonesians. Meanwhile the national convention of the re-publican movement continued its leisurely and academic deliberations and soon the main centre of trouble shifted to Baudoeng. Rocket-firing Mo-quitoes and dive-bombing Thunderbolts were used against the Indonesians in S. Bandoeng. In April of the next year Lord Inverchapel arrived the next year Lord Inverthapel arrived as mediator and, as a result Indonesian envoys and Dr. van Mook the governorgeneral, went to the Hague for negotations. It was agreed that an Indonesian epublic should be formed as part of the Commonwealth of the Dutch E. Indies within the circle of the whole Dutch 1942. and In Javanese Waters, 1944;

realm. This was based on the charter proclaimed by Queen Wilhelmina in Dec. proclaimed by Queen Wilhelmina in Dec. 1942 to give equal status and equal rights of citizenship to all parts of the Dutch realm. The Dutch would not, however, agree that the projected republic should extend beyond J. to include Sumatra, the Celebes, Moluccas, and other is., until the wishes of the natives were known. Dr. Sjahrir then went off to lay the Hague agreement hefers Seekarne and returned agreement before Soekarno, and returned, after a long time, with counter proposals which rejected everything agreed at Tho Ingue and demanded the formation of an entirely independent Indonesian Re-public, to include all the Dutch E. Indies, punne, to include all the flutch E. Indies, thus repudiating all thought of a federative scheme. In view of Soekarno's bad record in the war, it was not surprising that negotiation was difficult if not impossible. Soekarno had hastened to collaborate with the lone. laborate with the Japs. . he was president laborate with the Japs. he was president of their puppet gov. in J. and was decorated by them. A hery orator, with no constructive ability, the Dutch naturally refused to have any dealing with him. All through the year fighting had never ceased and there was continual guerilla sniping by Soekarno's followers. Meanwhile there were still over 30,000 internoes—Dutch women and children, Euraslaus and Javanese ('hristians in the extremist's heads, all of them week and extremist's hands, all of them weak and emacated to the edge of starvation and dejected to the loss of all self-respect. Yet the men who could thus treat their fellow-evantures (some of them their fellow-countrymen) claimed the right to rule 40 millions of Javanese. The next im-portant development was the draft agreement signed by Dutch and Indonesian delegates at Cherlbon (Nov. 18, 1946), by which the Dutch Gov. recognised the gov. of the republic of Indonesia as exercising de facto authority over J., Madoera, and Sumatra. The areas then occupied by allied or Dutch forces were to be included gradually through mutual co-operation in Republican ter, and measures were to be taken at once to ensure that this inclusion was completed by Jan. 1, 1949. The Indonesian question, however, was by no means so near settlement as that agroement implied. Indeed the final cease-fire was not jointly ordered by the Dutch and Republican Govs, until Aug. 1949. This order followed the winding up of the 'pre-liminary conference' of Dutch and Ropublican representatives held at Batavia before the ensuing round-table conference at the Hague. At the same time an inter-indo-nesian conference, held to settle the principles of the constitution of the 'Re-public of United Indonesia' as the new state was to be called, reached agreement on controversial issues concerning the inner cabinet and the senate. (See also Indo-NESIA).

J. Fabricius, Java Revisited, 1917; J. S. Furnival, Colonial Policy and Practice. A Comparative Study of Burma and Netherlands, India, 1948.

Javary, see Jabary. Java Spartow, see Rice Bird.

Java Sea, sometimes called the Sunda Sea, situated between Java and Borneo, and stretches from the W. of Celebes to the E. of Sumatra.

Javea, or Jabea (anct. Xávea), tn., 45 m. N.E. of Alicante, Spain. Its products are wines, lenions, nandarm oranges, and muscatel raisms. Pop. 6600. Javolenus Priscus, eminent Rom. jurist,

b. about the beginning of the reign of Vespasian (4.D. 79). His master was Calius Sabinus, and he became a leader of the Sabinian or Cassian school. Priscus was a member of the council of Antoninus Pius. See Pliny the Younger, Ep., nus Pius.

vi., 15.

Jaw, bones forming the framework of the mouth. In man the upper J. is termed the superior maxilla; the lower J. the inferior maxilla or mandible. The latter, the largest bone of the face, consists of a horizontal portion and two upright portions, called the rami. Both Js. bear teeth (q.v.). The closing and opening of the J. is effected by four pairs of muscles, two attached to the outer, and two to the unner side of the rami of the lower J.

Jawhar, state of the Konkan div. of Bombay Prov., India. Area 310 sq. m. Prin. products, teal, and rice. The chief vil. is J. Pop. 50,000.

Jawor, see JAUER.

Jaworow, tn. of Ukrainian S. A. Its
obief industries are browing, distilling,
and pottery making. In the famous It. and pottery making. In the famous It. gardens is the castle which was the residence of King John Sobieski, of Poland Szkto near by is known for its sulphur springs. Pop. 15,000.

Jaworzno, tu. of Ukrainian S.S.R., 30 m. W.N.W. of Cracow. There are petroleum wells, coal mines, and zine-smelting works. Pop. about 13,000.

Jaxt, see JAGST.

Jay, or Garrulus glandarius, species of the sub-family Garruline and of the crow fine sub-raminy Garrunna and of the crow family (Corvide), and is a native of Europe, while other species of the same genus are found in India and other parts of Asia and in Japan. In the New World the blue Js. (Cyanocitta) are found in N. America and Cyanocorax in Central and S. America, these latter birds being more blue than the common J. In England the common J. has become rare owing to per-secution, and this is the case in Scotland and in some parts of Ireland. It is char-acterised by a creat of black and white feathers, a black tail, and white and black bars on the wing coverts, its body being a bars on the wing coverts, its pody penns a brownish colour on the upper surface and lighter underneath. It has also patches of blue. The Js. are sly and retiring in their habit, and have a screeching cry with the power to vary it by mimicking other birds. They feed chiefly on smalls, insects, worms, and nuts. They hide insects, worms, and nuts. They hide their nests in trees with thick foliage and lay about six or seven eggs at a time.

Jay, Harriett (1863-1932), Scottish author and actress, was brought up by Robert Buchanan, the Scottish poet and writer, who married her elder sister. Sho writer, who married her enter sister. Since collaborated with Buchanan in sev. of his works, e.g. The Shopwalker and Two Lattle Mads from School, and pub. independently: The Queen of Connaught (1875), Madge Dunraven (1879), Two Men and a Maid (1881), A Marriage of Convenience, (1885) and The Life of Robert Buchanan (1903). As an actress she also won great distinction.

won great methodon.

Jay, John (1754–1829), Amer. politician and lawyer, b. at New York. He drew up the constitution of New York State in 1777, and was appointed judge. He became president of the Congress in 1778. In 1789 he was made chief justice of the Supreme Court. In 1791 he drew up a treaty, called the Jay Treaty, whereby the unland trade between the United States and Brit. N. America was properly States and Brit. N. America was properly organised in the interests of both countries. J. became governor of New York in 1795. He was a very able politician, especially in the held of international politics. Lives have been pub. by W. Jay, 1833; W. Whitelocke, 1887; and G. Pellew, 1890.

Jay, William (1769-1853), Eng. Nonconformist minister, b. at Tisbury, Wiltshire, England. Early in life he worked as a ma-ou. Cornelius Winter provided

as a mason. Cornelius Winter provided for him to be educated as a minister. His devotional writings had a vast circulation in England and America. See G. Redford and J. A. James (ed.), Autobiography of William Jay, 1854.

Jay, William (1789-1858), Amer. abolitionist, b. in New York. He became a judge in 1818. He founded the Amer. Bible Society (1815), but the greater part of his energies were devoted to antislavery interests. The Anti-Slavery Society had in J. one of its most fervent and eloquent members. In 1833 he pub. the Life and Writings of John Jay. See B. Tuckerman, Jay and the Constitutional Movement for Abolition, 1893.

Jayadeva, Hindu poet, best known as the author of the mystic poem, Gitagorinda. His date is disputed; Lassen believes he f. in the twelfth century. He is considered the finest lyric poet of India. is considered the finest lyric poet of India. See Sir W. Jones, Poems, consisting chiefly of Translations from the Asiatic Languages, 1777; Sir E. Arnold, 'The Indian Song of Songs' from the Gita Gorinda of Jayadera, 1875; and Indian poetry, 1881.

Jazyges, Sarmatian tribe, who lived N. of the Sea of Azov. In the first century A.D some of them settled in Hungary, others N. of the Carpathians.

Jazz name given to the development.

Jazz, name given to the development after the First World Way of dance music, a musical idiom deriving in mood, it is claimed, from negro folk-song and based claimed, from negro folk-rong and based technically on the device of syncopation, that is, on delayed or misplaced accent. The term is often misapplied to what may more accurately be called 'ragtime,' a crude attempt to give vitality to dance music which was practised in England during and immediately after the First World War, and which was remarkable only for its sterility. J., or, as it has also been called, symphonic syncopation, was introduced into England from America in 1924, when Paul Whitemen's band made a tour of the courter. 1924, when l'all whitemen's band made a tour of the country. Since then it has developed very rapidly, though only remarkably in the instrumental virtuesity of its executants. The early jazz musicians, like the early medheval choirs, improvised a rudimentary counterpoint while listening to the melody. But now their tunes are elaborately and variously scored and the quality of present-day. scored, and the quality of present-day dance bands is to be judged chiefly by the harmonic and rhythmical resources of the orchestrator. Although J. has still to win the approval of serious musicians, it will undoubtedly be part of the social hist. of the early twentieth century. Mr. T. S. Eliot has suggested the effect the internalcombustion engine has had on our perception of rhythms. Something of the sort seems responsible for the popularity of J.. combining, as it does, an easily repeated formula of melancholy, very welcome the omotionally bankrupt or wasteful, with the comforting reliability of a precise with the comforting reliability of a precise ongine beat. 'A hypnotised abandonment of self,' it has been shrewdly defined, 'to the exact rhythms of machinery.' See A. Casolla, Il Jazz and Della Musica Necessaire in 'L'Italia Letteraria,' and reprinted in '21 + 26' (Rome), 1931 and W. Hobson, Imerican Jazz Music, 1940.

Jeanne d'Albret (1528-72), queen of Navarre, duke of Albret and peer of Navarre, duke of Albret and peer of

Navarre, duke of Albret and peer of France, and Margaret, sister of the Fr. king, Francis I. She married Anthony de Bourbon, duko of Vendome, and their son Henry became Henry IV., king of France. Jeanne d'Arc, see JOAN OF ARC.

Jeanneret, Charles Edward, sec LE COR-

RUBIER.

Jeannette, bor. of Westmoreland co., Pennsylvania, U.S.A., 23 m. S.E. of Pitts-

burg. It has a supply of natural gas. I'op. 16,200.

Jeans, Sir James Hopwood (1877-1916). Eng. mathematician, b. at Southport, son of W. T. Jeans, a parl, journalist. Edu-cated Merchant Taylors's School; Trinity College, Cambridge; 2nd wrangler, 1898; Smith's prizeman, 1900. Fellow of Trinity, 1901; univ. lecturer in mathematics, 1904. Prof., applied mathematics, Princeton Univ., 1905-09. Stokes lecturer in applied mathematics, Cambridge, 1916-12. Awarded Adams Prize in 1917 for essay Problems of Cosmogony and Stellar Dynamus. Secretary to Royal Society, 1919-29. Recearch associate, Mt. Wilson Observatory, 1923. President, Royal Astronomical Society, 1925-27 Knighted, 1923. O.M., 1939. President, Brit. Association, 1934. One of his first scientific investigations was that resulting in the proof of Maxwell's law governing the distribution of velocities among mole-College, Cambridge; 2nd wrangler, 1898; Smith's prizeman, 1900. Fellow of the distribution of velocities among molethe distribution of velocities among mon-cules, his studies in this field being pub. in 1904 as The Dynamical Theory of Class. At Princeton in 1906 he pub. his Elemen-tary Treatise on Theoretical Mathematics, and, two years later, his Mathematical Theory of Electricity and Magnetism, the At Princeron in 1906 he pub. his Elementary Treatise on Theoretical Mathematics, Sophoeles with trans. and commentary and, two years later, his Mathematical in 7 vols. His other works include: The Theory of Electricity and Magnetism, the Primer of Greek Literature (1871), Modern

of the development of the Quantum Theory, on which latter, in 1914, he made a report to the Physical Society entitled Radiation and the Quantum Theory. But his most impressive work was that which he accomplished in the sphere of comogony, on which he pub., besides the cysny above, Astronomy and Cosmogony (1928). In this field his most striking achievement was his explanation, following Chamberlin and Moulton, of planets and their satellites as being due to tidal forces raised in a star by the close passure of another star. The completeness of these mathematical investi-gations destroyed the nebular hypo-thesis of Kant and Laplace. He also threw some light on the conjectural source of stellar radiation and energy. His popular expositions of science enjoyed phenomenal sales—less surprising in view of the attractive style of his treatises, the non-mathematical sections of which may be enjoyed even by the layman. These popular books also include J.'s contentious philosophical deductions from modern science. He stressed the part played by mathematics in science to a degree scarcely equalled since Pythagoras. Other works: Atomicily and Quanta (1926), Ros, works: Atomicily and Quanta (1920), Ros, or the Wider Aspects of Cosmogony (1928), The Wuter Aspects of Cosmogony (1928), The Mysterious Universe (1930), The New Background of Science (1933), and The Grouth of Physical Science (pub. in 1947), Jebail, or Jebeil (1 anct. Byblos), tn. on the coast of Syria, near Mt. Lebanon, and

the coast of Syria, near Mt. Lebanon, and I's m. N.N.E. of Beirut. It has old walls, a fine citadel, a castle dating from the crusades, and an interesting medieval church. Many sacophagi were found here during excavations. The old walls are 1 m. in circumforance. Pop. 350.

Jebavy, Václav, Czech poet, writing as Otakar Brezing, b. 1865 at Počátky, S. Bohemin. Vols. of poems: Secret Distances (1895), Domining in the Hest (1895), Polar Winds (1897), Temple Builders (1896), The Hands (1901). Ex ays: The Music of the Springs (1903). Eng. trans. of his poetry have been made by Percy Paul Selvein: Anthology of Modern Stacenne Literature (1919), and Otaka raul Selverin: Anthology of Modern Slavome Literature (1910), and Otaka Bresina (1921).

Jebb, Sir Richard Claverhouse (1841–1905). Scottish classical scholar and writer, b. at Dunde. He was senior classic at Cambridge in 1862. In 1875 he was made prof. of t.k. at Glasgow Univ., and in 1889 was appointed regims prof. of tk. at Cambridge. He was chief pro-moter of the inter-collegiate classical lectures at Cambridge, and helped to organise the Cambridge Philological Society. He was also one of the founders of the famous Brit. School of Archaelesy at Athens. In 1891 he became Umonist M.P. for Cam-bridge Univ. J. brought out some of the finest eds. of the Gk. classics. His best works are perhaps his ed. of and commen-tary on The Attic Oralors from Antiphon to

Greece (1880) Introduction to Homer by Great Britain and Turkey and Holland (1887), Grouth and Influence of Greek Poetry (1893) and Bacchyludes (1905) See I ady Caroline Jebb. Life and Letters of Sir Richard Clair erhouse Jebb, 1907

Jego, or Jeddo, see FORYO Jegoebboy, Sir Jamsetjee Bart (1783-1848) Life and Life an

Jebel al-Tur, see OLIVF4 MOUNT OF Jebel Barkai, see BARKAI

Jebel Druse, for of the mandated state of Syria with its seat of gov at Ls Suweidch It lies S of Hauian In 1941 during the Brit invasion of Syria it was occupied by a Brit cavalry brigade

and the Fr garrison marched out
Jebel-el-Tarik, see GIBRAI TAR

Jebel en-rahm, see Arak at Mr Jebel-esh-Sheikh, see Heryov Jebel-Nur, mt , near Mecca, Arabia The Moslems believe that here Vohammed received the Koran from the angel G thriel Jebel Shammar, Shummer or Shomer, dist of Central Arabia in the N of Neid

It contains two granite ridges traversing it from F to W one of which is about 6000 ft high The cap is Hail During the Arabian war much fighting took place in this dist and in 1921 Hail was captured and the dist annexed by Ibn Sa ud

170 000

Jebusites, Canaanitish tribe mentioned frequently in the O T Their home Jebus is sometimes regarded as an carlier name for Jerusalem which was in their possession until its citadel was captured by David like J were eventually re

duced by Solomon to slavery

Jeconian see Ji Holachi Jedburgh royal lurgh and the co tn of Roxburghshire, Scotland situated on Ied Water 56 m by rail S k of Fdinburgh The name was originally Jedworth and is now known in the vicinity as Jethart | I he tn itself is an old one being one of those which played a part in the Border wars The abbey, which dates from the twelfth century, is the remains of the church attached to an Augustinian priory century, is the remains of the church attached to an Augustinian priory founded by David I and laid low by the Lng during the first half of the sixteenth century The old castle was destroyed in 1409 and in its place now stand the remains of a prison This to is also associated with Mary Queen of Scots, Prince Charles Edward, Burns and others It is the chief seat of the woollen manual in the dist and here also iron foundries. Per dist, and has also iron foundries 3500

Jedda, Jeddah, or Jiddah, prin scaport of Hejar Arabia, situated on the Red ea, between 50 and 60 m W by N of Mecca, of which to it is the port Conse quently the pilgrims bound for that city disembark here a great number visiting it annually It exports hides, mother of pearl, coffee, and carpets A municipal council has been set up in the in The members are chief officials and persons who are nominated or approved by the king of Saudh Arabia Subject to the count and pearly and pearly the country of the co king of Saudi Arabia Subject to the royal approval, resolution, passed by the council become law On May 27, 1927, Great Britain recognised the complete independence of the dominion of Ibn Saud, king of Hejaz, in a treaty signed at Jeddah The Fr nation raised its consulate at Jeddah to the rank of a legation in 1929. Its example was followed.

Jeejeebhoy, Sir Jamsetjee Bart (1783-18 9) Indian merchant and philan thropist b at Bombay He gave hos pitals schools, colleges and public works in 1842 Queen Victoria bestowed knight

hood on him, and in 1858 a baronetcy Jesseries, John Richard (1848–87), Eng naturalist and novelist, son of a small farmer was b at Coate Farm, near Swin don, Wilts He went to school at yden ham then it Swindon until he was about fifteen but his most inspiring teachers were his father and a keeper on a neigh bouring estate who made him acquainted



RICHARD JEFFERIKS Plaster cast from a bust by Margaret Thomas

with the wonders of nature and taught him to use his powers of observation. In deed it is said that he really owed his first work of any value, The Camekeeper at Home (1878) to what he had learned from his close friendship with the Burderop keeper whom he used to help as a youth by keeping down vermin on his pheasant preserved He began life as a journal of preserved He began life as a journalist on the staff of the North Wilts Herald of which he was editor during 1866-67 His letter to the Times (1872) on 'The Wilt shire Labourer' brought him into public notice and thereafter he wrote for the tion in 1929 Its example was followed Pall Mall Gazette, in which appeared his

Camekeeper at Home and Wild Life in a Southern County (1879) both afterwards repub. Both these works are full of minute observation and vivid description of country life. They were followed by The Amaleur Poacher (1880), by some considered his best work; Wood Magic (1881); Itound about a Great Estate (1881); The Open Air (1885) (with a Brighton and Boachy Head background) and others on similar subjects. Among his novels are Bevis (1882) in which he draws on his own childish memories and which has been described as the best boys' book in the language; and After London, or Wild England (1885), a romance of the luture when London has ceased to exist. The Story of my Iteart (1883) is an idealised picture of his inner life. Life of the Fields (1883) includes one of his bost essays—Clematis Lane. Other works are: Hodge and his Masters (1880), Nature near London (1883), and Amarytlis at the Fair (1887). J. died after a painful illness, which lasted for six years. In his own line, that of deneting with an intimate knowledge of nature, all the clements of country life and wild life, plant and animal, surviving in the face of modern civilisation, he has had few equals. Fix. and Hedgerow was pub. after his death (1859). See lives by E. Thomas, 1909; C. J. Masseck, 1913. See also S. J. Looker (ed.), Jefferies England, 1937; M. Elwin, The Essential Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. Looker (ed.), The Nature Duaries and Note-books of Richard Jefferies, 1918; S. J. L

of Richard Jefferies, 1918.
Jefferson, Thomas (1743-1826), third, and one of the greatest Prosidents of the U.S.A., b. at Shadwell, Albomarle co., Virginia, the son of a planter. He was of Welsh origin. A member of the was of Welsh origin. A member of the second Continental Congress of the thirteen America's pantheon by writing the Declaration of independence, which was adopted with but a few slight changes. He was made governor of Virginia in 1779, and narrowly escaped capture by Tarleton. He succeeded Benjamin Franklin as the Amer. envoy to France, and later when Washington became President of the U.S.A. he made J. secretary of state. It was largely due to J. that the cap. of the U.S.A. was estab. on the banks of the Potomac R., in what is now the city of Washington, and he himself afterwards was the first President Inaugurated there. In 1796 Hamilton was the natural leader of the Federalist party, but John Adams was nominated for the Presidency. J., as the leader of the Republican, which afterwards became the historic Democratio party, ran against him. Adams was elected President, and J. Vice-President. In 1800 J. once more ran for the Presidency with Aaron Burr as his party's candidate for Vice-President, and Burr had received an equal vote. J., however, was chosen by the House of Representatives on the advice of his old antagonist Hamilton. In 1804 J. was e-elected by an overwhelming majority. The greatency was the Louisiana purchase, where

by the U.S.A. secured a vast ter. W. of the Mississippi R. some 1,171,931 sq. m. in extent. This purchase completely changed the future hist. of the U.S.A. It paved the way for continental expansion. It made the Mississippi entirely an Amer. owned riv. During J.'s term also the U.S.A. sent an expedition against the Tripoli pirates and stopped their raids, considerably reduced the national dobt, and issued the famous embargo act prohibiting the salling of Amer. vessels for foreign ports while the Brit. and Fr. navies were chasing each other on the high seas. At the close of his second term, the legislatures of cight states asked him to run for a third torm, but he declined, thereby setting the precedent that no President shall serve for more than two terms—a precedent set asked for the first time in 1940 when President Franklin Roosevelt became President for his third term.

J. was a statesmun of compromises; for J. the philosopher, in the eighteenth century sense, was rather a different man from J. as manager of his own large properties and as office-holder. Thus, while he hated slavery and tried to suppress the traffic he remained the owner of 200 negroes; he was always suspicious of bankers, yet he turned to London for the funds needed for the Louisana purchase; and he hated political chicanery, yet ho must have been aware that a bargain was being struck between his supporters and those or Alexander Hamilton to obtain his election as president. Such compromises, however, are the price of political pre-eminence. Nevertheless the positive and outstanding achievements of J. were very great; in his own state of Virginia, the termination of feudal land tenure, separation or Church and State, the foundation of a programme of free education; in the United States, the public land system, the Bill of Rights, and the Louislana purchase—besides considerable contributions to the theory of checks and balances among the executive, legislative and judicial branches of the

checks and balances among the executive, legislative and judicial branches of the federal constitution.

J. retired to his home, Monticello, in Virginia, and in his old age founded the univ. of Virginia near Cha lottesville. A curious thing about J. is the epitaph he wrote for his own tomb. He, who had held so many high others at the hands of his countrymen, wrote this: 'Here was buried Thomas Jeflerson, author of the Declaration of American independence, of the Statute of Virginia for Religious Freedom, and Father of the university of Virginia.' He died on July 4. A memorial tablet was unveiled to J. in 1933 at Glynceirog, N. Wales, of which vil. his father was a narive. He made an important contribution to the Revolutionary cause in A Summary View of the Rights of British America (1714). See M. Beloff, Thomas Jifferson and American Democracy, 1948. J. Dewey, Jefferson, 1943.

J. Malone, Jefferson the Virginian, 1949.

Jefferson City, cap. of Cole co. and of the

Jefferson City, cap. of Cole co. and of the state of Missouri, situated about 110 m. W. of St. Louis. There are flour mills, foundries, and machine shops and shoe,

the dist. It contains the state house, court house of Lincoln Univ., and sev. other institutions. Pop. 24,200.

Jefferson River, riv. of the U.S.A. It rises in S.W. Montana and finally joins the Madison and Gallatin rivs., the three streams forming the Missouri. It is about 150 m. long.

Jeffersonville, city of Indiana, U.S.A., co. seat of Clark co. It stands in a rich farming dist. on the Ohio, opposite Louisville, Kentucky. The city possesses rail-

vino, Kentucky. The city possesses ran-way works, machine shops, and iron foundres. Pop. 11,400.

Jeffries, Ellis (1872–1943), Eng. actress, b. at Colombo, Ceylon. Associated with Cyril Maude at the Haymarket, where one of her greatest successes was in W. H. Davies's comedy Cousin Kate. She began her career at seventeen in the chorus of the Savoy Opera and played in pantomimo and light opera. Sang most of the female parts in La Urgale at the Lyric Theatre. She then took part in comedy with Charles Wyndham at the Criterion, in The Bauble Shop and other plays by Henry Arthur Jones, with John Hare at the Garrick, in America in The Notorious Mrs. Ebbsmith, and at the Duke of York's in The Marriage of Killy. Tall, graceful, with a clear, inclsive utterance, she was a true comedian, but was not deficient in the dramatic force required for such rôles as those of Zicka in Diplomacy and Olga in Began a film career in 1930, appearing in Eliza Comes to Stay, The Return of a Stranger, and other pictures. Twice married, her first husband being the Hon.

George Curzon. Jeffrey, Francis Jeffrey, Lord (1773-1850), Scottish judge and critic, educated at Edinburgh, Glasgow, and Oxford. Meeting for years with little success, either Meeting for years with intie success, siner as lawyer or journalist, his opportunity came in 1802, with the founding of the Edinburgh Review. Sidney Smith was first editor, but when he removed to London in 1803 J. was placed in charge. Retaining control for twenty-six years, he raised the Edinburgh to the highest rank. In 1806 J. went to London, where he had his famous duel with Moore, so satirised by Byron. In 1830 he was made Lord Advocate, and entered parliament. In 1834 he accepted a judge-hip and a peerage. Among his critical works are Samuel

Frederick Curzon, son of Earl Howe, their son being well known on the stage as

age. Among his critical works are Samuel Richardson (1853) and Jonathan Sunft (1853). See lives by Lord Cockburn, 1852; T. Carlyle, 1881; J. Taylor, 1892; and R. Bald, 1925.

Jeffreys of Wem, George Jeffreys, Lord (1848-89). Lord High Chancellor of Eng-land, b. at Acton, Denbighshire. In 1688 he was called to the Bar, and in 1683 be-came Lord Chief Justice. As the records of L'alive are derived from bottle sources came Lord Chief Justice. As the records of J.'s life are derived from hostile sources, his reputation for injustice and crucity must be accepted with some reserve. His considered to have been fair in general. The action for which J. is most notorious is his presidency of the Bloody Assize emperor of China.

clothing, harness, motors and other factories. Coal and limestone are found in the dist. It contains the state house, court house of Lincoln Univ. and sev. opposition to the Long Parliament the other institutions. Pop. 24,200. J. placed at its head (1686). In 1688 J. was the king's chief instrument in securwas the king's chief instrument in securing the committal to the Tower of the
seven bishops. But the fall of James II.
drew in its train the fall of J.; he fied,
was arrested, and died miserably in the
Tower. See H. B. Irving, Life of Jeffreys,
1898, and H. Montgomery Hyde, Judge
Jeffreys, 1940, 1948.
Jegni Pangola, see Towi.
Jehangir, or Salim Nureddin Mohammed
(1569-1627), became king of Delhi and
Agra in 1605, succeeding his father Akbar.
Proviously to his accession to the throne
he had rebelled against his father and had

he had rebelled against his father and had attempted to seize Agra. The most important events of his reign were the wars in the Deccan and Udalpur, and the loss of Kandahar. During the last decade of his reign, his captains rose in insurrection, and his sons entered into a conspiracy against him. J. has left a vol. of memoirs entitled Jehangiri, full of delightful self-revelations and side-lights on court life in India. Capt. Hawkes visited the king at belhi, and has also loft an entertaining vol. of memoirs descriptive of this reckless ruler.

Jehlam, see JHELUM.

Jehoash, see Jeanh.

Jeholachin, called Jeconiah, king of Judah, succeeded his lather, Jeholakim, in 597 B.c. He only reigned for three months, being dethroned by Nebuchadnezzar and carried into captivity at Babyion. But in the thirty-seventh year of his captivity Evil-merodach, king of Babylon, released him, and granted him an allowance for the rest of his life (see 2 Kings

Jehoiada, high priest of Judah, during the reigns of Ahaziah, Athaliah, and Joash. When Athaliah, the mother of Ahaziah, sought to destroy all the seed royal, J. protected Joash, the young son of Ahaziah, in the temple, and subsequently anointed him king while the guard slew Athaliah, the usurping queen, on his instructions. J. then destroyed the house of Baal, instituted a public fund for the repair of the temple, and executed the work of restoration (see 2 Kings xi. and xii.

work of restoration (see 2 kings xi. and xi. and 2 cfron. xxiii., xxiv.).

Jehoiakim, or Eliakim, king of Judah (608-597 B.C.), son of King Josiah and Zebudah, the daughter of Pedaiah, received the throne as a vassal of Pharachnechol. But Nebuchadnezzar, king of Babylon, sacked Jerusalem, and J. became his vascal for three years (c. 605-602 B.C.). His revolt from allegiance to Babylon roused an attack on Jerusalem by the Chaldrean and Syrians, Jerusalem was sacked und the king slain (see 2 Kinga xxiii. 34 ff., xxiv. 1-5; 2 Chron. xxxvi. 4-8)

Jehol: (1) Prov. of China. Area, 74,278 sq. m. Pop. 6,110,000. (2) or Chengteh, cap. of J. prov., 115 m, N.E. of Pelping. It was the summer resort of the last

Jehoshaphat (c. 876–851 B.c.), king of regarded the idea as too abstract for so dah, succeeded his father Asu, and comparing a period, and have sought for a more Judah, succeeded his father Asu, and commenced his reign as an able and wise ruler. rooting out idolatry, and building strong-holds throughout the land. But the prosperity of his reign was reversed when he sought affinity with Alab, king of I-rael. Ahab, seduced by false prophets and in opposition to the warning of Micaiah, set forth on an expedition against Ramoth-gilead, and persuaded J. to join him. Ahab succumbed to a wound received in the battle, and J. only just escaped with his life. J. returned to Jerusalem and rehis life. J. returned to Jerusalem and re-formed the judges and priests, and carried out a successful campaign against Moab and Ammon. But rum awaited a mer-cantile expedition to Tarshish sent by J. in conjunction with Ahaziah, king of 1-rael (see 1 Kings xv. 21; 2 Kings iii.;

John Still-xx.).

Jehoshaphat, Valley of, mentioned in Joel iii. 2 as the place where the Lord shall be against. The Joel II. 2 as the place where the Lord shun pronounce His judgments against the chemies of His people. The valley has been identified with the valley of Ber-achah where Jehoshaphat trumphed over Ammon and Moab (2 Chron. xx. 26), but the probable site of the valley is the gorge situated between one Mt of Olives and the

Mt. of the Temple.

Jehovah, prin. name for God in the O.T., appearing nearly 7000 times. It is now felt that there is no authority for such a pronunciation, which is founded on a mis-apprehension. The original word, known as the Tetragrammaton, consists of the letters JHVII, or better, YHWH. This name came to be considered too ineffable to pronounce, and hence the vowels of the word Adonai (lord) were inserted, as a direction to the reader to replace it by this word. Thus we have the form YeHo-Wall, of JeHoVall—hort e taking the place of short a. If the Tetrugrammaton is preceded by the word Adonal, the yowels of Elohim (God) are inserted, giving the form YelloWill. There has been much controversy both as to the original form of the word and also as to its origin and meaning. The early theory is now almost abandoned, there being general agreement in the acceptance of Ewald's agreement in the acceptance of Palace suggestion that the true form is Yahwch The forms Yahu and Yah also occur, both separately and as a component purt in proper names. The question as to the origin of the title is more difficult. Ex-odus til. 13 and vi. 3 imply that it wa odus III. 13 and VI. 3 imply that it was first revealed to Moees, but it had already been used earlier (e.g., tien, indeed, formed the chief means by which the composite authorship of Genesis was discovered (see Heyateuch). Some have held that it was borrowed from the Kenites who inhabited the region around Sinei. who inhabited the region around Sinai, and that the Mosale revelation was only and that the Mosaic revelation was only one of meaning and application. The moaning is given in Evodus iii. 11, by God himself, as 'I am that I am,' and later simply 'I am,' and according to this interpretation, which is generally accepted, the word is the third person singular impropert of the arrigant stem. Why

concrete explanation.

Jehu, son of Jehoshaphat, and grandson of Nimri, was king of Israel during the latter part of the ninth century R.C. He was general under Jehoram, and during the illness of that prince at Jezreel he sched the throne, and proceeded to seeme it by wholesale slaughter (see 2 Kings ix. ff.). He justified his cruel actions by the words of Elijah and the prophets. Elisha seems to have supported him as a useful substitute for Jehoram, from whom little action could have been expected. J. is mentioned in a tablet of Shalmaneser II. (842 B.C.) as paying tribute to Assyria. J. was noted for his reckless chariot driving: hence the latter part of the minth century B.c. his reckless charlot driving: hence the modern application of the name to reckless drivers

Jeisk, or Yeisk, tn., in the Kuban Valley, Caucasia, Russia, on the S. shore of the gulf of Taganrog in the Sea of Azov. Its exports include corn, flax, and wool. Pop.

50,000.

Jejunum, meaning enpty, one of the three arbitrary divs. of the small intestine (q.v.). It is about 11 in. wide, and 8 ft. long, and is the connecting portion lying between the duodenum and the ileum. In general, its structure resembles that of the duodenum.

Jelalabad, see JALALABAD.

Jelalabad, see JALALABAD.
Jelal-ud-din, or Rumi, famous Sufic poet of Persia, b. at Balkh in Khorasan. In memory of his son Ala-uddin, and his instructor Sufi Shams-uddin, both killed in a mob riot, he founded the order of Maulawi dervishes. This order is characterised by the mystic dance (Samā), symbolical of the movement of the spheres and of the soil. His most famous works are his odes, mainly composed in honour of the Maulawi dervishes, and his great of the Maulawi dervishes, and his great poem the Mathnawi.

Jelenia Cora, see HIESCHBERG.

Jelgava, Mitau, or Mitava (Lat. Mittavia, Lettish Felgava), tn. in the Latvian S.S.R., on the Aa. 25 m. S.W. of Riga. It was formerly the cap. of Courl and and the residence of the dukes in the sixteenth century. There are tanneries, flax and saw mills, and olicloth works, etc. In the Second World War J. was in Ger. occupation until 1944, the Russians recapturing the tn. on July 31 of that year. Pop. 31,000.

Jellachich, Joseph, Baron von (1901–59),

Austrian general and administrator, b. at l'eterwardein. He gained the confidence of the Creatians, and was appointed Ban of Creatia (1818). He took the chief part in suppressing the Magyar Revolt (1848-1849), and commanded his troops against Montenegro (1853). He wrote and pub.

Jellicoe, John Rushworth Jellicoe, first Earl (1859-1935), Brit. admiral; b. at Southampton; younger son of Capt. John moaning is given in Exons in. 12, by the himself, as 'I am that I am,' and later himself, as 'I am,' and according to this simply 'I am,' and according to this Steam Packet Co.; and great-grandson interpretation, which is generally accepted, the word is the third person singular time of the battle of Trafalgar. After lar imporfect of the archaic stem HWH some schooling at Rottingdean, J. passed (to be). Many scholars, however, have the preliminary examination for the navy ing-ship Brilannia. Became sub-lieutenant, 1878; lieutenant, 1880, with three first-class certificates. In 1881 he was appointed to H.M.S. Agincourt: he was present at the bombardment of Alexandria, July 1882; and he accompanied the naval brigade that murched with Wolseley to Ceirca and fought at Taleal, Keblr. Return. Origade that marched with woiseley to Cairo and fought at Tel-el-Kebir. Returning home, he won an £80 prize for 'gunnery-lieutenants,' 1883. His next ship was H.M.S. Monarch: from her, in May 1886, J. performed a life-saving feat for which he received the Board of Trade which he received the Board of Trade medal. He was for a while gunnery-lieutenant on H.M.S. Colossus: then junior staff-officer on H.M.S. Excellent; then first lieutenant on H.M.S. Sans Pareil. He was for three years assistant to Capt. (afterwards Lord) Fisher, director of naval ordnance. J. became commander in 1891, and was on board H.M.S. Victoria when she went down in the Mediterranean, June 22, 1893. He



LORD JELLICOE

next served in H.M.S. Ramillies: then. becoming captain in Jan. 1897, he became flag-captain on H.M.S. Centurion, and was chief of staff to Vice-Adm. Sir E. Seymour during the attempted relief of the Peking legations, 1900: severely wounded at Peitsang. He was naval assistant to the controller of the Navy 1902–03, and was Controller of the Navy 1902-05, and was then appointed to command of H.M.S.

Drake. Director of Naval Ordnance, 1905-07; he greatly improved the shoot-ing abilities of the navy. He was made subumbral surface is the mouth, bordered rear-admiral, Feb., and K.C.V.O., Aug.

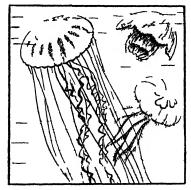
at the age of tweive and entered the training-ship Britannia. Became sub-lieuten-1907-08; lord commander and controller ant, 1878; lieutenant, 1880, with three of the Navy, 1908-10; vice-admiral, first-class certificates. In 1881 he was appointed to H.M.S. Agincouri: he was present at the bombardment of Alexandria, home fleet, 1911-12; and was Second Sea July 1882; and he accompanied the naval Lord, 1912-14. In 1913, for a while, he was the state of the state of the second division of the second divi left his shore duties to command the Fleet in mannuvres. On the outbreak of the First World War, J. was given com-mand of the Grand Fleet. He became full admiral, March 1915; and thence-forward till near the end of 1916 the fleet's hist. is his—especially the battle of Jut-land, May 31, 1916; wherein his flag flew on H.M.S. Iron Duke, and after which the on H.M.S. The Dike, and after which the Ger, fleet kept in harbour until its time for surrender. At the end of Nov. 1916, J. was made First Sea Lord, and relinquished command of the fleet to Sir David Beatty. He became chief of the Naval Staff, 1917. Suddenly ceased to be First Sea Lord at the end of that year, being succeeded by Sir Rosslyn Wemyss. No official explanation was given of the abrupt dismissal. He was elevated to the peerage as Viscount J. of Scapa and, later, received the thanks of Parliament together with a grant of £50,000. After the Armistice, he toured the Dominions in H.M.S. New Zealand, to prepare for reorganisation of Empire navies. Governor of New Zealand, 1920-23. He retired from the service in 1924, and in 1925 was made Earl J. and Viscount Brocas of Southampton for his part in the battle of Jutampton for his part in the battle of Jut-land, see JUTLAND, BATTLE OF. He pub.: The Grand Fleet, 1914-16, its Creation, Development and Work (1919), The Crisis of the Naval War (1920) (which narrates the chief features of his work in the critical year of 1917), The Submarine Peril (1934, on the peril of 1917 and its lessons for the future). See life by R. H. S. Bacon, 1936,

Jelly, solid state of matter produced by the addition to a liquid of some colloid substance, e.g., gelatine. A distinguishing feature of J. is its elasticity. Is are much used as an article of food, and are eaten as sweets or savouries. The best J. is made trom calves feet, and is very strengthening.
Ox-toot J. is also an excellent dish for invalids. Gelatine is much used in the manut. of sweetmeats, e.g. in gums and pastilles. Of vegetable Js. agar-agar is well known, and is useful as a media in bacteriology. Of the inorganic Js. that produced from a solution of silicic acid is

produced from a solution of silicic acid is best known. See also Preservivia.

Jelly-fish, bell-shaped or disc-shaped marine hydrozoa, embracing Medusac Ctenophora, and Siphonophora. In the Medusac the body is shaped like a bell or a parachute. The body is bordered by a fringe of writhing tentacles, supposed to resemble the snake-locks of the gorgon Medusa—hence the name. The animal normally swims with its subumbral surnormally swims with its subumbral surface downwards. The distinguishing feature of the J. is the misgion, a diaphanous

The muscular system is arranged in a circular formation on the under surface of the unbrella. The muscles contract and the water is thereby pumped from the sub umbrella and the animal is jerked up ward. This is the only means of loco motion. Medusir seize their prey by their



JELLY 11510

tentacles, the victim tecomes paralysed and a drawn into the mouth. The Clean phore are a species of J which have both radial and bilateral symmetry. They are bell shaped the mouth being situated at the broader and They have cight meridians of iridescent paddles. I occurate the process of the paddle.

Jemappes, industrial in in the prov f
Humant Belgium 3 m W of Mon
Here the Fr under Dumoniez defeated
the Austrians and became masters of Belgium (1742) There are rich coal mines
glass por claim 1984 il non and chem
ical works For 12 100
Jemappe, Belgium tn m 5 W of the

Jemeppe, Belgium in m 5 W or the city of Liege on the Meuse It has coal mines irrestone and mulle marries it chief industries are non-liss and of lop 13 700

Jena, in in I burment (crimany It is situated on the i b of the Saale about 12 m S b of weimar at i s surrounded by lime stone hills. It i mold in an isomeone in the limit of lim

Jenghiz Khan (1163-1227), Mogul con queror and emperor, son of a petty fartar queror and emperor, son of a petty Fartar chef lby skill and ruthless daring he gradually subdued all Mongolia changing his original name of Temuchin to Jenghiz (perfect warrior) in 1212-14 he con queror N. China lour years later an insult offered to his crivory in Turkestan led to his invading that country with an led to his invading that country with an interest heat Inthe first bettle the Turkes. immense host In the first battle the Turko mans lost 160,000 men and for seven your the war raged with terrible cruelty mury citics being totally destroyed and thou inhabs massacred J swept through Afrhanistan into the Punjab which he I vistated returning afterwards to Turk ctin Another Mogal army penetrated to Russia as far as the Dureper carrying ft minimuse spoils. In 1225 J. again attacked (him caj turing cities and provs with frightful carnage but died in return the from the can paign. It is said that he c purposed exterminating the Chinese in ituming their country into prairie but was list ded by one of his counsellors ill we are computed to have cost six in thou lives their greatest re ult was the a ving into Asia Minor of various Lura? n in tribes who afterwards founded the Ottoman unpire and invaded Europe the empire founded by J soon broke up uch of it falling to Kubi it Khan See I H Hart Great Captains Unreited 1127 and lives by F Rashid al Din 1868 F Krause 1922, and H Lamb 1123

Jonkin, Henry Charles Fleeming (1833) 1885) Fing engineer in 1853 he with lord kelvin made experiments in the manuf and use of cables His researches on gutta percha were of the utmost value lit was elected F.R.S. and was appointed prof. of engineering at Univ College London, in 1865 and at Edinburgh Univ 1868. He pub a valuable text book on Magnetism and Electricity (1873). He instituted telepherage an electric automatic system for transporting goods. Se I. L. Stevenson's Levanya. Tall and college.

Jakers Junkin is Cockshot)

Jonkins, Robert Fire metchant sea captim of the W In hies He appeared before the House of Commons with one of his cars in cotton alleging that the spinnards had board it he vessel accused him of smuggling, and cut off his car Ilms provoked war tetween lengland and spain and led to W ih ole s downfall (1742)

Jankinson Anthony (d. 1611) Lug metchant and sea captain. He visited Asia Minor and A. Alica (1546) and in 1547 was appointed agent of the Muscovy Company. He trivelled to Bokhara (1588) ind was omnussioned to trade with Persic By his chorts his company obtained the min poly of the White Sea trade See Larly Loyages and Iraces in Russia and Persia (Hakhuyt Society 1886), and biographical introduction by L. D. Morgin.

Jenkinson, Robert Banks see Liver

Jenne, in an important centre of commerce in Upper Schegal (Fr.), on the R Niger 250 m S S W of Fimbuktu Once the cap of the Songhoi empire

Jenner, Edward (1749-1823), Eng. physician and originator of vaccination, b. at Berkeley, Gloucestershire. Left an orphan at six years old, he was brought up by his eldeet brother, the Rev. Stephen J., and educated for the medical profession. In 1770 he became a pupil of the famous John Hunter, with whom he remained two years. Declining offers of advancement in London, he returned to estab. a practice in Herkeley, wishing to be near his brother. J. never passed a musical examination, such examinations not being compulsory in his time. He bought the degree of Doctor of Medicine from a Scottsh univ. and later applied to Oxford univ. to grant him their honorary degree of M.D. and received it. He took great interest in the natural hist. of his dist. founded a local medical association, and was a general favourite in society. In 1788 he married Miss King-cote. As a child J. had himself suffered the risk associated with the inoculation of smallpox matter.



EDWARD JENNER
After a print engraved and coloured by
I. R. Smith

and from his apprenticeship days with Hunter he was curious about the nopular belief in Gloirestershire that persons who contracted cow-pox were thenceforth immune from smallpox. J. mentioned to various people, including Hunter, his interest in the matter, but he got no encouragement in his researches. But years later, the popular belief became estab, as a conviction in his mind and he saw that, if the were possible to transunit the cowpox virus from one individual to another (by moculating persons successively by the arm-to-arm method), the result would be an available source of cowpox lymph which would be independent of the existence or otherwise of the natural disease in

cows at any given time. If this could be done, he saw that another difficulty might arise: after transmission through many individuals the virus might lose its immunising power. J., having collected material to confirm his conviction con-cerning cowpox as a protective virus set out, in 1798, to investigate the above two propositions. After a number of experiments he pub. his results in his celebrated work, An Inquiry into the Causes and Efficis of the Variotic Vaccina, a disease discovered in some of the Western Countles of England . . . and known by the nume of the Cow-Pox (1798). In the first ed, of the Inquiry, J. adopted the attitude that efficiently performed vaccination carried out with lymph taken at the right stage of the pock would give complete and permanent protection against smallpox, a view he maintained all his life. This was unfortunate because it was not true, though those who did contract smallpox suffered only from mild attacks. J. was the first to have the conception which is expounded in his *Inquiry* and the first to have the courage to test his doctrines. After him no one else attempted to extend the province of artificial immunity until Pasteur in 1880 introduced the inoculation of fowls for fowl cholers. All modern methods of preventing certain infectious diseases by immunilogical methods trace diseases by immunilogical methods trace their ancestry back ultimately to the substitution by J. in 1798 of vaccination—which became an estab, fact by 1800. At first he met with great opposition, yet he secured a hearing from many influential persons including the royal family. Vaccination spread through England. Attempting in 1798 to introduce a system of receivable in the second the most of the most statement of the second the most statement. vaccination in London, he met with great opposition, but nevertheless secured a hearing from many influential persons, including the royal family. Vaccination spread through England and other countries with such results that in 1802 parliament voted J. a grant of £10,000 (raised a few years later to \$20,000), and on the Continent he was elected a member of most of the great scientific societies. At home, the great scientific societies. At home, however, the jealousy of his professional colleagues led to much bickering and irritation; he was worn with incessant work, and the death of his wife in 1815 affected him greativ. He retired from public life, but continued his investigations until struck down by apoplexy.

Jenner, Sir William, Bart. (1815–98), Eng. physician, b. at Chatham, educated at Univ. College, London, In 1844 he

Jenner, Sir William, Bart. (1813-98), Eng. physician, b. at Chatham, oducated at Univ. College, London, In 1844 he became M.D., and in 1847 began a course of investigation by which he oventually proved the distinction betwoon typhus and typhoid. He became prof. of medicine at Univ. College, physician to sev. great hospitals, and medical adviser to the royal family, attending the Prince of Wales in his attack of typhoid. Receiving a baronetcy in 1868, he was in 1881 elected president of the College of Physicians. Rather autocratic in manner, but kind and consultant that he left a fortune of 2300,000. His writings include important

works on fever and diphtheria.

Jennings, Sarah (1660-1714), see MARL-1 BOROUGH.

Jenolan Caves, or Fish River Caves, beautiful stalactite caves situated on the W. side of the Blue Mts., 113 m. W. of Sydney, New S. Wales.

Jensen, Johannes Vilhelm, Dan. novelist; b. 1873 at Farso. A student at Viborg, 1893; studied philosophy and medicine. His first book appears to have been Danskere, a tale pub. (1896). His most important works are:—Himmer-lands Historier (1898-1910), Kongens Fald inist instorier (1898–1910), Kongens Fala (hist. novel of sixteenth century, 1899–1902), Madame d'Ora (1904), Skorene (1904), Eksoliske Noveller (1907–25), and a series of six novels together called Den lange Rejse, and descriptive of the progress of the Nordic race throughout ages. Other pubs.:—Det Hirende (1934), Dr. Henaults Fistelser (1935), Gudrun (1936), Durduse (play, 1937), and numerous short stories.

Awarded Nobel Prize, 1914.

Jensen, Peter Christian Albrecht (b. 1861), one of the greatest authorities of the day on Assyriology. J. was born at Bordeaux, studied Hittite and Semitic Bordeaux, studied Hittle and Semitic archaeology, subsequently became prof. of Semitte philology at Marburg Univ. (1802). His was are: Hittler und Armenier, (1898), Assyrishbabylonische Mythen, (1900 01), section 'Hittites' in Hilprecht's Explorations in Bible Lands (1903), and Das Gilgamesch Epos in der II ellitterateur (1906), etc.; Gilgamesch Epos, judaische Nationalsagen, Ilias und Ollinsee (1924)

Odyssee (1921).

Jenson, Nicholas (or Nicol) (1420-81), Master of the Mint at Tours in the reign of Master of the Mint at Tours in the reign of Charles VII. of France and, according to some, a Walloon by descent. The king, hearing of Gutenberg's printing experiments, sent J. to Manz to obtain Gutenberg's secret. J. leaned the trade, but subsequently migrated to Venice. It is believed, however, that in the years 1462-1470 he was associated with Sweyonheim and Damagetz two ther. printers who had and Pannartz, two Ger. printers who had estab, themselves in a Benedictine monastery at Subjaco near Rome. At all events, he began printing at Venice about the year 1470, and there designed a rom. type of much beauty and merit that has been He is menclassic to the present time. He is men-tioned in the Cologne Chronicle of 1499 as a printer to whom some had erroneously given credit of being the first inventor of the art. Extant portraits of him appear to be imaginary. See M. W. Haynes, The

to be imaginary. See M. W. Haynes, The Student's History of Printing, 1930.

Jephthah, according to the narrative in Judges xi. I ft., was an illegitimate son of Gilead, after whose death he was driven out by his brethen. He became the leader of a band of freebooters, until he was recalled by the olders of Gilead to lead them against the Ammonites. This refract to do unless he was afterward. he refused to do unless he was afterwards made their judge, and this position was promised to him. He collected a large army and made a yow that if he was sucessful he would offer as a burnt-offering to Jehovah the first thing that came forth

her perpetual virginity. J.'s later exploits were against the Ephraimites. It has been suggested that two persons, Jair and J., are confused in this account.

Jeppesen, Knud (b. 1892), Dan, musicologist and composer, a pupil of Carl Nielsen (1865–1931). He occupies an eminent position in Dan. musical life as composer, educator and musicologist. After taking his musical degree, he continued his studies in Vienna with Guido Adler and Robert ies in Vienna with Guido Adler and Hobert Lach, obtaining his doctorate of philo-sophy with his thesis. The style of Pales-trun and the Dissonance, a detailed study of Palestrina's harmonic system. This work has been pub. in Dan., Ger., and Eng. As administrator and lecturer J. has held high posts at Copenhagen Con-servatoire and Copenhagen and Airhus Univs. He has written many works on Univs. He has written many works on music and ed. Acta musicologica, a quarterly concerned with musical science. Though not prolific as a composer, he has written a number of songs and motets and choral works, of which ' Lave og Jon ' and a 'Cantata in celebration of the Reforma-tion of 1536' are well known. His 'Te Deum Dameum' however, is probably his thest work, written for four solosts, two choirs and orchestra, the words being after the old version of the Ambrosian Hymn.

Jerablus, see CARCHEMISH.

Jerablus, see CARCHEMISH.

Jerash, see GERESA.

Jerba, or Girba (anet. Meninx), is. of
Tunis in the gulf of Cabes, off Africa, has
an area of 125 sq. m. It is separated from
the mainland by a fordable channel
formerly crossed by a Rom. vluduct.
There are many Rom. remains, ixcluding
a triumphal arch and two castles. It is
very fortile to live dates and opened. yery fertile; olives, dates, and oranges grow there. The inhabs, are occupied in sponge dishing. The chief tn. is Haumt-cs-Sik. Pop. of tn. about 3000; of is. 35,000.



from his doors on his return. This yow led to the sacrifice of his daughter, which bers of the Dipodide, a family of myomorsome tried to soften into a dedication of phous redents remarkable for their powers Jerboa, name popularly given to members of the Dipodide, a family of myomor-

of leaping. or leaping. They are terrestrial animals, inhabiting the sandy or grassy plains in Asia, E. Europe, and N. Africa. *Dipus*, the typical genus, is from 6 to 8 in. in the typical genus, is from 6 to 3 in. in length, with a long tail and naked ears; the fore-limbs are very short and have five fingers, while the curiously elongated hind-limbs have only three toes. It is by means of these enormous legs that they are able to leap when in danger, but when undisturbed they walk on them in an ordinary way. The Js. are also burrowing ordinary way. animals, using their strong incisors for that purpose; their habits are nocturnal, and they feed on roots, seeds, insects, birds' eggs, etc., and occasionally do great damage to grain-crops. They are sometimes eaten by the Arabs. D. hirtipes is a well-known species; Alactage is common on the Siberlan steppes, A. jaculus being known as the jumping rabbit; Platycercomys is distinguished by raport; Playercomys is distinguished by a flattened, lancet-shaped rail; Zapus is the so-called jumping-mouse of the U.S.A., and the genus Sminthus, whose legs are short and nearly equal, may be regarded as approaching most nearly to ancestral form.

Jeremiah, called also Jeremias and Jeremy, one of the greatest of the Heb. prophets, is described in the first verse of the book which bears his name as the son of Hilkiah, whom some have identified with the Hilkiah mentioned in 2 Kings xxii. He belonged to a priestly family of Anathoth, which he later quitted for Anathoth, which he have quitted in Jerusalem. The vision by which he was inspired to take up the prophetic work is given in the first chapter. This took given in the first chapter. This took place in the thirteenth year of the reign of King Josiah (c. 627 B.C.). Five years later occurred the tamour discovery of the Book of the Law by Josiah, which led to that prince's great attempt at reform. In this J. does not figure at all, though there is no reason to suppose but that he was in well sympathy with it. But it was not long before the prophet began to feel that no great or deep reformation could be car-ried out by the secular arm, and it was this that ied him to take up the individualistic attitude which marks him off from istic attitude which marks him off from the other prophots. His prophecles were spread over the reigns of Jehoahaz, Jeholakim, Jeconiah, Zedekiah, and part of the period of exile. The book of J., which is interspersed with accounts of historical incidents relating to general events and the life of J. himself added by a later hand, is tender and sad throughout. The prophet insists that the spiritual wellbeing of the chosen people is not bound up with their prosperity as a nation, and that only through defeat and oppression can the remnant be saved. He insists on the necessity of a spiritual religion and warns the read is that the povession of the temple of the Lord God will not secure them from defeat. He insists that the work of the Chaldrean will be accomplished not by succouring but by oppressing Israel. On account of the pessimism and, as was thought, lack of patriotism shown in his prophecies, J. was extremely unpopular and had to submit to much persecution.

They are terrestrial animals, aid of his triend Baruch, was cut to pieces and burnt, and he himself had to submit to frequent imprisonment under the most revolting conditions. After the capture of the city he received permission to dwell where he wished, and so attached himself to Gedaliah, the Babylonian governor. On the death of Gedaliah, he retired to Egypt, where tradition says that he met Egypt, where tradition says that he met his death by stoning at the city of Tah-panes. See expositions by G. Ewald, A. Graf, T. Cheyne, C. Ball, L. Elliott-Binns, 1919; G. A. Smith, 1929; see also W. H. Bennett, The Book of Jeremiah (Chaps. xxi.-lii.), 1894; and J. McFadyen, Jeremiah in Modern Speech, 1919. Jérémie, seaport in the is. and republic of Haiti, 119 m. W. of Port-au-Prince, has important trade in cocca, coffee, and log-

of Haiti, 119 m. W. of Port-au-Frince, has important trade in cocoa, coffee, and log-wood. The father of Dumas, the Fr. novelist, was b. here. Pop. 7000.

Jeréz de la Frontera (formerly Xeres), tn. of S. Spain in the prov. of Cadiz, situated on a vine-covered plain 12 m. N.N.E. of Cadiz. The tn. is chiefly tamous for its vines from which sherry is manufactured. Indeed, the wine lodges manufactured. Indeed, the wine lodges are a characteristic feature of J., but there are other buildings of note, the fifteenthcentury church of San Miguel, a tn. hall century church of San Miguel, a th. hall dating back to the seventeenth century, etc. Under the walls of J. the battle of Guadalete, which delivered Spain into the hands of the Moors, was fought in 711, and parts of the old walls still remain. The tn. was taken from the Moors by Altonso X. in 1265. Pop. 90,600.

Jerez de los Caballeros, tn. ot Estremadura, 40 m. S.E. of Badajoz, Spain, is the centre of an agric. dist. producing grain, fruit, vegetables, and cork. The main fruit, vegetables, and cora. wealth of the people consists or herds of swine and mules. Pop. 12,000. swine and mules. Pop. 12,000.

Jerfalcon, Gyrfalcon, or Fulcogyrfalco,

name of a species of falcon (q.v.) belonging to the Falconide: it is found in W. Russia, Scandinavia, Greenland, and Arctic America, and its colour varies from grey to white.

Jerichau, Jens Adolt (1816-83), Dan. sculptor, was a pupil of Thorwaldsen. He was commissioned to carve a frieze for the royal palace of Christiansborg, near Copenhagen, and this piece of work, which was finely executed, estab. him in high repute. Among his best classical studies are: 'Heracles and Hebe.' 'Ponelope,' and the 'Wedding of Alexander. His religious subjects include 'The Resurrection,' 'Adam and Eve,' and a figure of Christ. J. also made a portrait statue of

Jericho, once an important city of Palestine in the Jordan Valley, 15 m. N. E. of Jerusaicam. The site of the old city was in the midst of a fertile dist. where palms, rose trees, raisins, and balsams grew in profusion. According to the Hible narrative and other accepted authorities, the th. was captured by the Israelites on their entry into Canaan, refortified by Hiel the Bethelite, destroyed under Vespasian, and rebuilt under Hadrian. Antony is said to have given its groves to Cleopatra, and Herod the His book, which he had prepared with the Great dwelt there. In anct. times J. held

a fairly important position strategically, dominating the chief trade routes of antiquity from Jerusalem towards the E. But it was too isolated to be able to rely in an emergency on the help of friendly cities, and consequently it was, from a very remote age, surrounded by defensive walls; and both hist, and archeology agree that the city was frequently destroyed. Early in this century, Ger. excavators discovered the defensive ramparts of the old city of J., and their evidence, including the traces of destruction and of the segment to correlevate the dence, including the traces of destruction alone forms a genus. It occurs in Paleand of fire, seemed to corroborate the Biblical story. Further investigation in a long period without water.

the wall are found burned to the ground, their roofs fallen upon the domestic pot-tery within.' All these facts give strong support to the Bible narrative, making it support to the Bible narrative, making it probable that the fallon walls of the Late Bronze Age are actually those of the city which is said to have been taken and burnt by the Israelitos under Joshua. See Sir Charles Marston, New Knowledge about the Old Testament, 1933.

Jerioho, Rose of, or Anastatica hierochuntina, species of Crucifere, which also alone forms a genus. It occurs in Pales.



IN THE WINE CELLARS OF JERÉZ DE LA FRONTERA

1920 showed that the stone rampart was of the Middle Bronze Age (c. 1800 B.C.), but the date of the inner wall was left to but the date of the inner wall was left to be estab. by Sir Charles Marston's ex-pedition under Dr. John Garstang, Prof. of Archæology at Liverpool Univ. which proved that the inner wall belonged mainly to the Late Bronze Age, the period of Joshua. Cuttings made by Dr. Garstang, in June 1930, in the mound of old J.—the ruins of the walls are situated near the modern vil. El Riha (Arabic form of Jericho), on a low mound at the foot of the W. plateau—revealed that the fortifications of J. represent an almost continuous occupation, twice broken by invasion between 2000 and 1600 B.C.: at which latter date the walls were reconstructed upon the brink of the mound, and these in their turn perished in some conflagration. The W. side of the defences showed conthe w. side of the defences showed con-tinuous signs of destruction and con-flagration, the outer rampart (which is 6 ft. thick) suffering most, its remains falling down the slope. The most arrest-ing fact disclosed by Dr. Garstang is the traces of intense the 'including reddened falling down the slope. The most arrest-falling down the slope. The most arrest-young king's refusal, he led the revolt of ing fact disclosed by Dr. Garstang is the traces of intense tire 'including reddened (see Israrel). His erection of golden masses of brick, cracked stones, charred alves for worship at Bethel and Dan timbers, and ashes. Houses alongside led to his name becoming a byword in

Jeritza, Maria, Austrian seprano, b. at Brno, 1894. Studied plano, violin, cello, and harp. Cultivated voice when fourand harp. Cultivated voice when four-teen under Prof. Auspitzer of Brno. Made début as Elsa in Lohengrin at Olmutz, Austria, 1909. Member of Imperial and Royal Opera, Vienna, 1913. Metro-politan Opera Co., New York, 1921— Amer début as Marietta in Die Tote Stadt. Successful as concert singer. First Class of the Order for Meritorious Service, Austria, 1935. An Eng. trans. of her reminiscences, entitled Sunlight and Song, appeared in 1924.

Jeroboam I., son of Nebat, was the first king of Israel after its separation from Judah on the death of Solomon. He was ging of Brief was a burner of Solomon. He was made Solomon's tax-gatherer in his own dist. of Ephraim, but the suspicion that he was about to raise a rebollion caused him to make a hasty flight into Egypt. On Solomon's death he returned and headed the curbassy to Rehoboam, asking for a lightening of the taxation. On the

In the nineteenth century, ship-building, sea-faring, and overseas trading-and earlier days, privateering—were the mainstay. These activities have disin earlier days, privatoring the disappeared and the is. is now dependent upon agriculture, mainly for export, and upon seasonal tourist traffic. Import trade is substantial and is done almost entirely with the United Kingdom.

Early potatoes and tomatoes, both really authors and often in succession in

grown outdoors and often in succession in one season, are the main export crops. Pre-war annual exports, entirely to the United Kingdom, averaged about 60,000 tons of potatoes and 25,000 tons of tomatons of potatoes and 25,000 tons of tomatoes, and 53,000 tons of granito, of an aggregate value of about £2 millions. Tomato exports to the United Kingdom in 1947 reached a record of 44,590 tonvalued at £21 millions. Some 1000 head of cattle are exported each year, mainly to the United Kingdom and the U.S.A., also to Australia and New Zealand. The normal cattle pop. of the is. numbers about 10,000. The J. breed of cattle is remarkably free from disease and the high yield of milk and its high butter fat content is unsurpassed. Breeding standards tent is unsurpassed. Breeding standards are maintained by the breeders' organisations. The animals lose some of their peculiar characteristics after four or five generations have been bred overseas, and this ensures a recurring demand for cattle from the is.

J. has some peculiarities of fauna, also much archæological interest, notably inegalithic tombs, the finest being La Hougue Bie. See A. Saunders, Jersey. 1642-1990, 1930-33: Ward, Lock, and Co. (pub.) Guide to the Channel Isles, 1934: G. R. Balleine, A Bibliographical Dictionary of Jersey, 1948.

Jersey Breed, see under Cattle.

Jersey City, co. seat of Hudson co., New Jersey, U.S.A. At the N. the Hudson and Hackensack Rs. make it almost an ls.. whilst southward it is flanked by New J. has some peculiarities of fauna, also

and Hackensack rs. make it almost an is., whilst southward it is flanked by New York and Newark bays. It is separated from New York by I m. of riv., and connected with it by sev. lines of forries, the Hudson R. tunnels, and recently by the vehicular tunnel which was opened in 1928. It is the E. terminus of many rail. ways, and has spacious docks along its 12 in. of water frontage. l'ossesses many tobacco, rubber, and sugar-rofining fac-tories, crucible works, foundries, boiler works, and factories making rolling stock, motor cars, and wireless apparatus. It has large stock-yards, and cnormous numbers of sheep and cattle are slaughtered for New York and other mkts. It has a free library with more than 100,000 books. Education is well provided for in many public schools, the Hasbrough Institute, St. Peter's College, St. Dominic's Academy and St. Mary's Academy. Paulus flook occupied the site till 1820, when the city of Jersey was incorporated. The pop. has increased rapidly and reached 301,300 in 1940.

Jersey Shore, settlement on the W. fork It has large stock-yards.

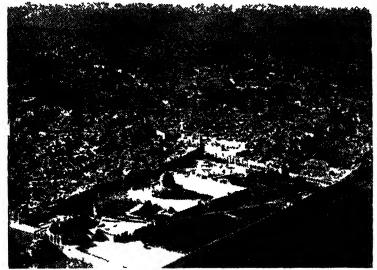
Jersey Shore, settlement on the W. fork of the Susquehanna R., in the Lycoming co. of Pennsylvania, U.S.A. There are silk mills, cigar factorics, foundries, etc. The dist. is agric. Pop. 5400.

Jerusalem, city of Judæa, and cap. of Palestine, of which country it constitutes a separate div. for purposes of administra-tion, situated 31° 46′ N. lat., and 35° 13′ E. long. It stands on a plateau formed of two hills, and bounded both E. and W. by valleys, that on the E. being the brook Kidron referred to in the N.T. To the N. there are also two valleys. The generally exact idea of the geography and geology of J. is due to a succession of investigations which commenced in 1833. After that time the work continued under various investigators, of whom the most prominent were De Vogué (1860-63), Capt. Wilson, R.E. (1866), Capt. Warren, R.E. (1872-75). Still more results have been obtained by the Palestine Exploration Fund, which commenced operations in 1894, and a great impetus was given to the work after the First World War, especially through the activities of the Brit. School of Archaeology in J. In the period 1910-30 the chief excava-To the N. there are also two valleys. In the period 1910-30 the chief excavations in the vicinity of J. were those of Parker in 1911, Weili in 1913 and 1923, Macalister and Duncan in 1923-25 and by Crowfoot in 1927-28, all of Ophel, the hill to the S.E. of the city, and the topo-graphical data from these excavations are of value as establishing the position of the City of David, and also as indicating, though not finally proving, that some of the rock-out caves may formerly have been used for royal tombs. Excavations at the Citadel at the Jaffa Gate, so con-spicuous a feature of the Walled City, have spicious a reature of the Walled City, have proved that the massive tower commonly called the Tower of David is really the Tower of Phasael, one of the three erected by King Herod about 25 B.c. as defences for his citadel and palace, and that it was inserted in a pre-Herodian wall on the N.W. corner of the anct. city, a large section of which has been uncovered section of which has been uncovered running across the Courtyard of the present Mameluke Citadel. Excavations in 1916 tend to confirm doubts which had in 1916 tend to confirm doubts which had arisen as to previously accepted beliefs about the extent of the first J., estab. in the time of the Heb. monarchy about 1000 B.c. to 587 B.c. The hill on which the Citadel stands is traditionally known as Mt. Zion, but the excavations do not support the theory that a part of the 'Stronghold of Zion,' the City of David and his successors was located on that and his successors, was located on that hill. Researches at the Walling Wall go to show that the boundaries of this celebrated relic coincide with those of the platform of the temple of Solomon, of which courses of stone are supposed to be in existence below the surface. Each of in existence below the surface. Each of the two hills which form the site of the city is a natural fortross, for the two are divided by a deep valley (the Tyropœon), and it is probable that from the earliest times they were so used. The lack of water must, however, have proved a serious disadvantage. The 'Virgin's Spring in the Kidron valley, and just outside the old city wall, is the only spring near the city, and there is but one important well within. The water in the Pool of Siloam is brought from the Virgin's Pool of Siloam is brought from the Virgin's

Spring by a rock-cut aqueduct, running the Ger. Catholic Church outside the Zion through the old Ophel wall. The Temple (comprising the dist, now known as the Haram) was built on the E hill. On the

Gate; the It. Hospital, designed like a Florentine palace; the Lutheran Church (comprising the dist, now known as the Haram) was built on the E hill. On the W. hill was built the upper city.

The chief monuments of interest to visitors are the Church of the Holy Sepulchre (q.v.), with remains of the basilica of Constantine, the Walling or W. Wall; the Mt. of Olives, the Tomb of David (Cænaculum); the Crusaders' Church of St. Anne; the Jewish Tombs in the Valley of Jenseulum; the Jewish Tombs in the Valley of Jenseulum; the Jewish Tombs in the Valley of Jenseulum; the Armenian Cathedral; Dung ('Cate of the Moors), S. wall



Paul Popper

JERUSALI VI AND THE MOSQUE OF OMAR

the Ecce Homo arch, the Church of the Tomb of the Virgin, and the Garden of Gethsemane. 'The old city within the walls, that city compact together' with its waulted sugs (bazaars) and narrow streets, that have undergone no change for contunes, with its steep alleys flanked in many cases by masterpleces of Saracenic architecture, may well, however, be regarded as the greatest monument of all,

and Zion ('Gate of the Prophet David'), S. wall, on Mt. Zion The Golden Gate, built in the fifth century on the Haram enclosure, was walled up by the Turks soon after they occupied Jerusalem in

soon after they occupied Jerusalem in the sixteenth century
J. has greatly altered in appearance since the kirst World War, and continued to develop throughout the Brit. mandatory regime. Some of the suburbs have gadded as the greatest monument of all, unique in its compactness, in its appear ance of hoary antiquity, and in that homo genefty which it is the alm of its prosent administrators (then the British mandatory gov) jealously to preserve (H. C Luke and E. Keth Roach, Handbook of Palestine and Transpordan, 2nd ed. 1930). There are big banks and com far more nuclean plan than those of even of the Moldings some of the most striking are the Anglican Cathedral and Close of St. George, built by George Jeffrey, the Franciscan Basilica in Gethsemane.

of last century there was not one building outside the cight gates of the city walls. But to-day hotels, large stores, and commercial buildings generally have been opened up outside the city proper, and with this development have come the garden cities. This greater J. has now spread half-way to Bethlehem to the S., the Nt Suggest of the N (the site of the days) in particular the present freedom outside the cight gates of the city walls. But to-day hotels, large stores, and commercial buildings generally have been opened up outside the city proper, and with this development have come the garden cities. This greater J. has now spread half-way to Bethlehem to the S., to Mt. Scopus to the N. (the site of the Brit. cemetery), and to the W. nearly to Ain Karim, the bp. of John the Baptist. Extension eastward is impossible, because there the land falls steeply into the Kidron Valley. Altogether more than seventy-five streets have been laid out in these new suburble, with such names as seventy-five streets have been laid out in these new suburbs, with such names as Isalah St., John the Baptist St., Herod's Way, Hezekiah St., and so forth, all of course being drawn from Biblical hist. Development has been on sound tn.-planning lines. The municipality has control over all building operations, and from the outset (1914) it was recognised that J. demanded specialised treatment, so that W. European architectural ideas should harmonise with an E. environment. should harmonise with an K. environment and E. conditions. The heauty of the buildings of J., considered apart from their sanctity, lies largely in the colour and texture of their stone, which, after a control has mallayed to a colden gray. and texture of their stone, which, after centuries, has mellowed to a golden grey. It blends in a remarkable manner the walls and gateways of the Old City, the towers of its many churches and monasteries, the modern commercial buildings along Princess Mary Avenue, and the villas of Rehavia and Qatamon. One of the aims of the Palestine Gov.'s tn.-planning commission under the mandatory regime was to maintain this unity of planning commission under the mandatory regime was to maintain this unity of character throughout the fast developing city by insisting on the use of stone for all buildings. The ubiquity of stone was threatened by the use of concrete, providing an instance of a W. technique, introduced by Jewish immigration, which conflicted with the traditional way of life. The account which Britain can give of her stewardship in respect of tn. planning in J. is one of which any administration might be proud. The successive measures of the Brit. planners during the thirty inight be proud. The successive measures of the Brit. planners during the thirty years of mandatory rule were directed to one or other of two objectives: the preservation of the Old City and the encouragement of high standards, hygienic, social, and esthetic, in the modern city, which during those thirty years, had fast been growing up around it. A proclamation was made by Lord Allenby as military was made by Lord Allenby as military governor in 1918 torbidding the crection, demolition, or alteration of any building within a 2500 metre radius of the Damescus Gate without a written permit, and this was only granted for building with an approved purpose (which excluded indus-trial building) and was subject to control trial building) and was subject to control of height and building material. Four, zones were defined: the Old City, which was to retain its medieval aspect and within which the traditional stone construction with vaulted roofs was advocated for any necessary rebuilding; the area immediately outside the city walls, where undesirable recent structures were to be demolished and new building pro-

days. In particular the present freedom from building in the Mt. of Olives region to the E. of the Old City which came within the third zone, is due first to the steps taken by the Brit. authorities and to the support of the Pro-Jerusalem Society. In 1930 the first complete tn.-planning scheme came into operation. An amplication of the Allenby provisions further safeguarded the Old City, and for the new matter control of the Allenby provisions further safeguarded the Old City, and for the new matter control of the converse of the control of the con tn., which covered an area nearly twenty times as large, detailed road plans were made and use-zones proposed for the areas to the N., W., and S.W.; and restrictions were placed on the permissible built-up area in order to secure some form of density control. An archeological area was defined, within which all building work had to conform to an Antiquities Ordinance. Certain defects of zoning and density in the 1930 scheme were re-medied in 1941. This amonded version of the scheme dealt with communication and instituted a classified road system, including an arterial ring road, besidedealing with overcrowded areas and open

including an arterial ring road, besidedealing with overcrowded areas and open spaces. All these measures were codified in the Tn. and Country Planning and Building Ordinance, 1947.

The building of Greater J. extends nearly as far as the Well of the Magn. Here the residences (and also those at Bethlehem itself) are especially handsome many of them having been built by native cratismen who had learned their trade in the U.S.A. and returned to Palestine as wealthy men. It is estimated that some £3,000,000 was spent between 1925-30 on the erection of private dwellings in Greater J., while over £250,000 was spent upon the handsome King David Hotel. On July 22, 1946, an entire corner of the hotel was destroved by hombs of Jewish terrorists. Military headquarters in Palestine and the prin. secretariat office, with the exception of that of the High Commissioner, were located in the building and over fifty persons were killed, including several senior Gov. officials. The most attractive of the garden cities are most attractive of the garden cities are Janjure, and Beth-Hakerem, while the new Arab colony of Tabliveh, S.W. of the city, has replaced what a few years ago was a waste, bearing a few olive trees. The largest and best known of the garden cities is the Talpioth, lying 8, of the city on the Bethlehem road, which has been developed by the Palestine Land Development. ment Company, and contains besides hundreds of stone dwellings -all detached and conspicuous for their balconies, arched windows, large verandahs, striking roofs, and fine gardens—a tn. hall, baths, synnigogue, theatre, and indeed all the amenities of an independent tn. community. Some of the most important public or commercial buildings completed in recent years in J. or outside the old city are the

Heb. Univ., opened by Lord Baltour in 1925, the new library on Mt. Scopus, containing the largest collection of Heb. books and papers in the world, the Pontificial Biblical Institute, the College of Jerra Santa, the Rothschild (Hadassah) Univ. Hospital on Mt. Scopus (dosigned by Eric Mondelsohn), the General Post Office (designed by Austin Harrison who designed Nuffield College), a good blend of W. functional ideas with E. motives, and the Anglo-Palestine Bank. J. being 1244 until 1917 J. remained in Moslem. and the Anglo-Palestine Bank. J., being a Holy City for three Faiths, is the seat of a number of Prelates and religious bodies. There are three Christian Patribodies. There are three Christian Patriarchs, Orthodox, Lat., and Armenian having the style of Beatitude, and, in addition to the Anglican Bishop in J., a Jacobite and a Coptic Bishop.

For long it was thought that the name of J. was given to the city after its con-quest by David, but this judgment has been reversed by the discovery of the Amarna tablets (c. 1400 B.c.) in 1890. Here the name occurs in the form Urusalim, some 500 years before the time of David. The derivation has been variously derived from Heb. forms meaning 'the city of peace,' 'possession of peace,' 'toundation of peace,' 'city of the god salam,' etc. In the Book of Joshua it is salin,' etc. In the Hook of Joshua it is possen of as Jebus, with the explanatory note 'which is Jer.' and an account is given of Joshua's assault on it. It soon fell back, however, into the hands of 'the stunger,' and it was not until the time of David that it was permanently captured and made the seat of the regal gov. (see Pavid). This occurred at the beginning of the tenth century B.C. For its hist, down to its destruction in the time of Zedekiah, see Israel, where is also given an account of the attempts to regiven an account of the attempts to re-build it under Ezra and Nehemiah, of the various foreign powers under whose dominion it successively came, and of the factions with which the city was torn, until the time of its utter destruction by Titus, the Rom. general. It was not long however, before the city was rebuilt, though on a smaller scale, by the Emperor Hadrian, and the new name of Ælia Camtoling was given to it. During the first few centuries it passed through a period few centuries it passed through a period of tranquility, but it again came into pro-minence as the habit of pilgrimage to sacred places grew up, and as spot after spot associated with ovents in the life of Christ were identified by revelations made Christ were identified by all Many great miraculously to individuals. Many great churches were erected, of which the first was Constantine's Church of the Anastass (1992) were the Holy Sepulchre. The was Constantine's Church of the Anastasse (336) near the Holy Sepulchre. The Church of St. Stephen and many other eccles, building, were erected by the Empress Eudocia from about 150 onwards, and Justinian built the Church of St. Mary, which later formed part of the Mohammedan mosque el-aksa. In 611 the city was taken by Chorcos, the Persian, and most of the churches were destroyed. It was recaptured by Heracilus in 627, but lost again nine years later, to remain in the hands of the Moslems until 1099. At the beginning of this period the mosque el-aksa was erected

dom of J. was not long-lived, nor was it by any means stable during its continuance. It fell in 1244, after having been for a short time in the hands of the ex-communicate Frederick II., to whom it had been ceded by treaty in 1229 after having been captured by the Moslems. From 1241 until 1917 J. remained in Moslem hands, and during this period its hist. was comparatively peaceful and uneventful. It passed into Turkish hands in 1517, and remained under Turkish rule until the remained under Turkish rule until the First World War of 1911-18, when it was taken by Gen. Allenby. Allenby ad-vanced on J. in Oct.1917. After cutting the Jaffa-Jerusalem railway at Ludd and El Ramleh, he occupied Jaffa on Nov. 16 and then began a movement to surround J., advancing on it from N., S., and W. All the Turkish positions round the Holy City were carried by storm, and thereafter the city was surrendered, on Doc. 9, without further resistance, thereby ending the Turkish domination of seven centuries. The tuil story of the brilliant capture of J. Will be found in the Record of the Advance of the Egyptian Expeditionary Force, compiled by Lt.-Col. H. Piric-Gordon, 1919. On his official entry Allenby made it known by proclamation that 'every sacred building, monument, holy spot, shrine, traditional site, endowment, pious bequest, or customary place of prayer, of whatsoever form of the three religious, would be maintained and protected according to the existing customs and beliefs of those to whose faiths they were sacred.' The condition of the city in Dec. 1917 is difficult to imagine when it is seen to-day. There were no sanitary arrangements in the old city, and the water supply came from private rain-fed cisterns; but the Brit. military anthorities not only placed any place of the distance of th ample samtary services at the disposal of ample amutary services at the disposal of the Governorate, but patrolled the Via Dolorosa to keep it free from pollution, and ordered a piped water supply to be installed. The inhabs, were not slow to appreciate that, whereas the Turks had left the city as to its water supply some-what worse than it was ..hen they first occupied it in the sixteenth century, the left, had in a few months given the city Brit. had in a few months given the city a supply on modern lines, and largely inde-pendent of the weather. From 1920 onpendent of the weather. From 1920 on-wards there were sporadic outbursts against the Jews on the part of the Arabs, especially in 1929—the Walling Wall riots—and from 1936—38, when under-ground Arab revolt against the Jewish inunigration and the National Home,

institution of this enquiry displeased the mediator, Count Bernadotte, in June : Zionists and was followed by terrorist out- but in the meantime the Anglican Cathedinstitution of this enquire displeased the Zionists and was followed by terrorist outrages organised by Irgun Zvi Leumi, the 'Stern Gang,' and Haganah, although disowned by the Jewish Agenov. Many outrages were perpetrated in J in 1946-47. With the ending of the Brit. mandatory regime in May 1948 war broke out in Palestine between the Arabs and Jowe It was hoped that a truce would protoct J. and the holy places, but in fact the war actually began in J. itself, when the Arab Legion from Transfordan shelled the Jewish quarters of the city and the Jews occupied various institutions from which

but in the meantime the Anglican Cathedral of St. George was soverely damaged by shell fire (June 5). The roof was wrecked, the pulpit and most of the windows destroyed, and there was much interior damage. Two days later the main dome of the Church of the Holy Sepulchre was penetrated by a mortar-shell fired from a Jewish position outside the City wall.

According to the decision of the United Nations the City of J. with its surrounding the and vils and all the Holy Places is to occupied various institutions from which be part neither of the Arab not the Jewish they fired on the Holy City and attacked | State, but is to be administered by an



THE WAILING WALL, JERUSALEM

Cunadian Pacific

J. generally. Churches, convents, and religious and humanitarian institutions religious and humanitarian institutions were made targets for cannon and rife fire, and some of these buildings were destroyed. Buildings occupied by the Jews included the Orthodox Gk. Convent of St. George, the convent of Nôtre Dame de France, the Fr. and It hospitals, etc.—all of which were occupied by Jewish forces on May 14-15, 2 e the date of the ending of Brit. rule. Shells were also fired into the Holy places from the Heb. Univ. and the Hadassah Hospital on Mt. Scopus. The convent of Nôtre Dame de France was largely destroyed. The Scopus. The convent of Notre Dame de France was largely destroyed. The Orthodox Armeman Convent received hundreds of shells fired by the Jews from the Benedictine Convent on Mt. Zion According to a protest circulated by the Lat. Patriarch to the Union of Christian Communities in Palestine most of the shells falling on the Holy Sepulchre and other Christian institutions were Jewish. other Christian institutions were Jewish. the purposes of administration, although In the same statement it was declared that the Arabs had respected holy places, churches, convents, and Red Cross institutions. A truce was arranged in J. soon agency. Access to them would be after the arrival of the United Nations guaranteed to all creeds and both govs.

Trusteeship and International International Trusteeship system, A special committee of the United Nations has completed its draft of a constitution for the Holy City and its report has been submitted to the Trusteeship Council But as late as the summer of 1949 the problem of the control of J. had not been settled though some progress had been made through the good offices of the com-mittee of the Palestine Conclusion Com-mission of the United Nations. It then mission of the United Nations. It the seemed to be agreed, unofficially between the Jews and the Arabs, that a partition plan which should be acceptable to the United Nations and the various religious faiths interested was the only practical solution. It was believed that the plan could be carried out without detaching J either from Israel or the gov. which would event-ually represent Arab-held Palestino. The plan, still in its early stage, was as follows the city would be divided into two parts for that of the pilgrims.

would be responsible for their socurity and that of the pilgrims.

See also under Palestine. See G.
Le Strange, Syria and the Holy Land,
1890; Sir C. Warren, Underground
Jerusalem, 1876; various publications of the Palestine Exploration Fund; Sir C. M.
Watson's Jerusalem, 1912; George
Jeffrey, A. Brief Description of the Holy
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Palestine, 1934; E. L. Sukralk, and L.
Mayer, Third Wall of Jerusalem, 1930;
H.M.S.O., Jerusalem city plan: preservation and development during British Mandute, 1914-18, 1948. dute, 1914-18, 1948.

date, 1914-16, 1948.
Jerusalem Artichoke, or Helianthus tuberosus, well-known species of Composite, closely allied to the sunflower, which is cultivated on account of its edible tubers. It is indigenous to Brazil, and its specific name is misleading, having arisen from the corruption of the It. word for a sunflower. It simple the composition of the it.

for a sunflower, ... airasole

Jerusalem Chamber, part of the deanery in Westminster Abbey, was originally the abbot's parlour, part of the abbot's house. it probably received its present name from the tapestries of the hist, of Jerusalem which formerly adorned it. The name is also noteworthy on account of its connection with the death of Henry IV., as narrated by Fabyan the chronicler (cf. Shakespeare's Henry IV., pt. 2, iv. 4). The chamber was restored in 1624, and The chamber was restored in 1621, and here the Assembly of Divines met in 1643. In later times it was the scene of the labours of the revisers of the A.V. of the libbe (version of 1831). The crown is lodged here on the night before the coronation. The chamber is 36 ft. by 18 ft. and the panelling is of the time of themsy VIII.

lienry VIII.

Jervaulx Abbey, ruin of an anct. Cistercian monastery which was once a great centre of life for the hamlet of Jervaulx, in Yorkshire, England. What is left of the cruciform church, the cloistral courts, chapter house, and refectory, etc., belongs

chapter house, and refectory, etc., belongs to the Transitional Norman or Early Eng. The last abbot was hanged in 1637, because he was implicated in the Pilgrinage of Grace.

Jervis, John (1734–1823), admiral, fought in Keppel's action of 1778. He received the Order of the Bath after seizing the Fr. ship Peyase in 1782, and took part, during the same year, in the relief of Gibraltar by Lord Howe. In the course of the war with France at the time of the Revolution, he took possession of the W. Indian is. of Martinique, Guadaloupo, and St. Lucia. In 1797 he ventured as admiral to 1608, as a Liberat. He Geame Solicitor-General, was knighted, and made privy councillor and Master of the mode of the Mildle Ages, which had designed upon it the genealogy, of Christ from 'the root of Jesse' (Is. xi.), father of David. There are examples at Wells, Chartres, of the war with France at the time of the shire, Downside Abby, Leicestershire, and St. Lucia. In 1797 he ventured as admiral to 1608, as a Liberat. He deamed to a mode of the Master of the made privy councillor and m

would be responsible for their security and | posals of reform and his rigid economies proved an unpopular policy.

of over an unpopular policy.

Jorvis Bsy, oighteen-year-old pleasure liner which was transformed during the Second World War into an armed merhant cruiser. She was unarmoured; her seven anct. 6-in. guns were kept there to guard convoys. She will live in navai annals for her gallant action on Nov. 12, 1910, against the powerful Ger. pocket buttle-ship Admiral Scheer, in which she saved thirty-four of a convoy of thirtybattle-ship Admiral Scheer, in which she saved thirty-four of a convoy of thirty-cight ships when they were attacked without warning by the Ger. ship. The J. B. salled out against the battleship alone. Her object was not the hopeless one of suking the Admiral Scheer; there was no hope oven of inflicting material damage. The object was to gain time to give the convoy a reasonable chance of escape. This the J. B. and its crew achieved after a two-hours' fight. Her death roll was 190. Some 65 survivors were rescued, the

a two-hours' fight. Her death roll was 190. Some 65 survivors were rescued, the ship being sunk. Her captain, E. S. Fogarty Fegen, R.N., was awarded a posthumous V.C.

Jeshurun, 'a portical name for the people of Israel' (Cheyne). The exact origin of the name is uncertain. It has also been suggested that it is used not for Israel only, but for righteousness, the ideal of Israel. It occurs in 1s. xliv. 2; Deut. xxxii. 15, and xxxiii. 5 and 26.

Jesi, see Issi.

Jesi, see IESI.

Jesmond, see under NEWCASTLE UPON TYNE.

Jessamine, see JASMINE.

Jesse, John Heneage (1815-71), Eng.
historian, a clerk in the Admiralty, after historian, a cierk in the Admiralty, after cudeavouring to write poetry, turned his talents to the field of historical memoirs. In 1840 he pub. Memoirs of the Court of England during the Reigns of the Stuarts, and, encouraged by the reception of this work, followed it with others of a like nature, the best of which dealt with the Lafe and Reign of George II (1862). His most valuable contribution to literature was George Selwyn and his Contemporaries (1843).

Jessel, Sir George (1821-73), Eng. judge, b. and d. in London, was of Jewish extraction. He was called to the Bar in 1817, made a Q.C. in 1855, and entered Parliament in 1868, as a Liberal. He became Solicitor-General, was knighted, and

Jessulmir, see Jaisalmir.

Jest-books. There are two kinds of J.

—compilations of witty sayings and practical jokes ascribed to some particular wit to ensure their sale and popularity, and collections of facetics admittedly brought together from various sources. The monkish reconteurs of the Middle Ages doubtless brought and spread many tales from the E., but numbers of typical jests and practical jokes probably existed independently throughout all countries and races of mankind, allowing for slight local changes. Among famous J. may be mentioned: Tarlion's Jests: a Hundred Mery Talys (c. 1525, first extant edition, 1611): The Witty and Entertaining Exploits of George Fluchanan, commonly called the King's Fool (Buchanan long being famous rather as a humorist than a humanist): Joe Miller's Jest-Book, or the Witt's Vade Mecum (1739, really compiled by John

Mottley, 1692-1750). Other similar collections are the Jests of Scogin, by 'A. B. of Phisicke Doctour,' 1613; Tales and Quick Inswers, very Merry and Pleasant to Rede (about 1535); John Taylor, Wit and Mirth, 1629, more original than most; and Wit and Drollery, 1661; by 'The most refined wits of the Age'; Merry Drollery, 1661; and Viestminster Drollery, or a choice collection of the newest Songs and Poins both at Courts and Theaters, by 'a Person of Quality,' 1671 (reprinted by Roberts of Boston), of the Cavalier period. See Chapbooks; Folklobe; Gotham, Tales of the Mad Men of See W. Haylit, Shakespeare Jest-Books, 1875, Studies in Joular Literature, 1890; The Literature of Roquery (in Types of English Literature), 1907; W. Jerrold, Book of Famous Wils, 1912; F. Kirkman The Wils, 1932.

END OF VOLUME 7